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# The Computer PAPER

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B.C. EDITOR: KIMBERLY MANNING    OCTOBER 2002    VOLUME 15    NO. 10

## GRAPHICS TOOLKIT



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**FIGURE 10-10** *Continued*

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Intel/Phoronix Processor in 2016 (with Xeon E5-2680 v4)  
 1. Intel Xeon E5-2680 v4 (2016)  
 2. Intel Xeon E5-2680 v4 (2016)  
 3. Intel Xeon E5-2680 v4 (2016)  
 4. Intel Xeon E5-2680 v4 (2016)  
 5. Intel Xeon E5-2680 v4 (2016)  
 6. Intel Xeon E5-2680 v4 (2016)  
 7. Intel Xeon E5-2680 v4 (2016)  
 8. Intel Xeon E5-2680 v4 (2016)  
 9. Intel Xeon E5-2680 v4 (2016)  
 10. Intel Xeon E5-2680 v4 (2016)

**Author's address:** Department of Psychology,  
University of California, San Diego, La Jolla, CA 92037,  
USA.  
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### Environmental Impacts

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ISBN 0-07-302400-0	Am. 175

February 2008 Newsletter

**\$2199** Learning from all angles. **2008 Honda Fit**. 160hp V-6 engine. 7-speed Pwr. Shift. 170mpg city/hwy. 2008 EPA est. 2008 MSRP \$22,999. \*MSRP excludes tax, title, license, dealer fees, and delivery costs. †See dealer for details. ©2007 Honda Motor Co., Ltd.

[illegible]

**Unpublished Page 10**

(C) The other two years	680,000
(D) All three years combined	940,000

[illegible]

**Recommendation:** *See text.*

• The last time he ate	1990
• The last time he ate	1990
• The last time he ate	1990

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Figure 11. *Mean annual precipitation (mm) for the period 1979–2000 for the 100 km radius around the study site.*

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a "comprehensive" mapping of the U.S. and Caribbean region. The project was funded by the National Endowment for the Humanities, Office of Caribbean Studies, and the National Endowment for the Arts, Office of Caribbean Studies. The project was a collaborative effort between the University of Miami and the University of the West Indies, with the University of the West Indies providing the majority of the funding. The project was a significant contribution to the understanding of the Caribbean region and its role in the world.

Article 10 permits adjustment of the Customs Agreement if the conditions of the Agreement are found to be no longer appropriate. The Agreement is subject to periodic review by the parties. The Agreement is subject to periodic review by the parties. The Agreement is subject to periodic review by the parties.

of 1998. This decision means that the company will have to pay the full cost of the new plant, which is estimated at \$1.5 billion. The company is also expected to pay a fine of \$10 million for the violation of the Clean Air Act. The company is also expected to pay a fine of \$10 million for the violation of the Clean Air Act. The company is also expected to pay a fine of \$10 million for the violation of the Clean Air Act.

[illegible]

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- Breakthrough glass picture perfect and seamless viewing angles up to 170° for multi-person observation
- Brilliant® LCD technology to optimize TV video, gaming and mobile applications with brightest, richest, most saturated colors

- Dynamic iTouch™ auto tune, ensuring the best possible image by automatically optimizing the monitor settings
- 3D video-assisted, for applications like CAD and engineering suites
- Professional-grade panel, ideal for spreadsheets, desktop publishing and web internet pages
- Breakthrough glass picture perfect and seamless viewing angles up to 170° for multi-person observation
- Brilliant® LCD technology to optimize TV video, gaming and mobile applications with brightest, richest, most saturated colors

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### 15" LCDs (1280 x 800 native resolution)

Features	VE300	VS300	VY300	VS300	VY300	VS300	VY300	VS300	VY300
Contrast Ratio	800:1	800:1	800:1	800:1	800:1	800:1	800:1	800:1	800:1
Brightness	250 cd/m²	250 cd/m²	250 cd/m²	250 cd/m²	250 cd/m²	250 cd/m²	250 cd/m²	250 cd/m²	250 cd/m²
Response Time	16ms	16ms	16ms	16ms	16ms	16ms	16ms	16ms	16ms
Viewing Angle	170°	170°	170°	170°	170°	170°	170°	170°	170°
Panel Type	MVA	MVA	MVA	MVA	MVA	MVA	MVA	MVA	MVA
Frameless	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Auto Rotate	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Dynamic iTouch	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
3D Video-Assisted	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Professional-Grade	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Breakthrough Glass	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Brilliant LCD	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

### 15" LCDs (1280 x 800 native resolution)

Features	VE300	VS300	VY300	VS300	VY300	VS300	VY300	VS300	VY300
Contrast Ratio	800:1	800:1	800:1	800:1	800:1	800:1	800:1	800:1	800:1
Brightness	250 cd/m²	250 cd/m²	250 cd/m²	250 cd/m²	250 cd/m²	250 cd/m²	250 cd/m²	250 cd/m²	250 cd/m²
Response Time	16ms	16ms	16ms	16ms	16ms	16ms	16ms	16ms	16ms
Viewing Angle	170°	170°	170°	170°	170°	170°	170°	170°	170°
Panel Type	MVA	MVA	MVA	MVA	MVA	MVA	MVA	MVA	MVA
Frameless	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Auto Rotate	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Dynamic iTouch	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
3D Video-Assisted	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Professional-Grade	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Breakthrough Glass	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Brilliant LCD	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

### 15" LCDs (1280 x 800 native resolution)

Features	VE300	VS300	VY300	VS300	VY300	VS300	VY300	VS300	VY300
Contrast Ratio	800:1	800:1	800:1	800:1	800:1	800:1	800:1	800:1	800:1
Brightness	250 cd/m²	250 cd/m²	250 cd/m²	250 cd/m²	250 cd/m²	250 cd/m²	250 cd/m²	250 cd/m²	250 cd/m²
Response Time	16ms	16ms	16ms	16ms	16ms	16ms	16ms	16ms	16ms
Viewing Angle	170°	170°	170°	170°	170°	170°	170°	170°	170°
Panel Type	MVA	MVA	MVA	MVA	MVA	MVA	MVA	MVA	MVA
Frameless	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Auto Rotate	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Dynamic iTouch	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
3D Video-Assisted	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Professional-Grade	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Breakthrough Glass	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Brilliant LCD	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

### Compare Feature Sets (1280 x 800 native resolution)

Features	VE300	VS300	VY300	VS300	VY300	VS300	VY300	VS300	VY300
Contrast Ratio	800:1	800:1	800:1	800:1	800:1	800:1	800:1	800:1	800:1
Brightness	250 cd/m²	250 cd/m²	250 cd/m²	250 cd/m²	250 cd/m²	250 cd/m²	250 cd/m²	250 cd/m²	250 cd/m²
Response Time	16ms	16ms	16ms	16ms	16ms	16ms	16ms	16ms	16ms
Viewing Angle	170°	170°	170°	170°	170°	170°	170°	170°	170°
Panel Type	MVA	MVA	MVA	MVA	MVA	MVA	MVA	MVA	MVA
Frameless	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Auto Rotate	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Dynamic iTouch	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
3D Video-Assisted	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Professional-Grade	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Breakthrough Glass	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Brilliant LCD	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

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# Technology high and low



**L**ow-tech had to sit out a questionnaire that asked me to name my "favorite low tech thing." I now see what that meant, but already overdue in responding, I typed to something about good magazines. I was able to cross the questionnaire off my to-do list, but that question lingered in the form of wanting to know what qualifies as high or low technology today.

Magazines (good or bad) are classic low-tech because the final product doesn't need to be plugged in or hooked up, but they require a wide range of advanced and unpolished technologies to get them from the idea stage to the point that they roll off the presses.

For the Redmonton Technology Institute (www.teching), a group of artists based in Sheffield, England, low tech is old tech—the older the better. The group says its artists and technologists can find creative uses for any machine, however low its specifications. This, then, means 6000 Macs, 75 MHz Pentiums, as long as they still work.

While the emphasis is on frim cutting edge—and the Web we spend a deliberately low-tech interface—members of the institute and its Accura Space media lab are using it to create quick sophisticated visual, audio and video art. The equipment is also used to create and host Web sites for community organizations and local nonprofit companies.

All the other end of the technology spectrum sits Gervais (www.gervais.bc.ca) and Xyberrant (www.xyberrant.com). The companies have integrated Vancouver-based Gervais' digital photography app-



For amusement park snapshots take photos with the Xyberrant Xyberrant mobile camera.

lication with U.S.-based Xyberrant's wearable computer. The result is a device for taking photos that can be instantly uploaded to a server or the Internet. The wearable photo studio uses some of the newest technologies available: a professional-standard digital camera, flash, keypad, dials, microphones, hand held bar code scanner, electronic communication capabilities, and wireless Web access.

I saw an earlier version of this setup at a tech gathering here at Van-verse. A Gervais staffer took photos of attendees who then used the on-screen keyboard to type in the email address of friends they wanted to send the image to, along with a message. The images were

later downloaded from the portable PC, prior to the wireless features being incorporated, and sent over the Internet. The new device is currently in use in a few theme parks in the U.S. The photographer scans the subjects bar-coded necks, then takes their photo. At the end of the day, visitors can check out the photos they requested and (presumably for a fee) have them or all the images emailed home or printed out.

The Gervais/Xyberrant setup very clearly belongs in the high tech camp, but categorizing the KIT's use of technology is less clear. The old systems are being incrementally upgraded using computers and have spawned creative projects and new commercial ventures, instead of high or low, maybe another adjective, like should be used to describe technologies that refuse to die.

Twenty years from now, when we're looking at old wearable computers on the scrap heap for the latest digital appliances, I'm sure the folks at Sheffield will be taking punk to get their hands on a portable photo studio.

Let us know what you think.

Megan Johnson  
Managing Editor

\*Editor David Smith is on vacation. He returns next issue.



## The Computer PAPER

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**Flat, bright... and three-pronged**

In the "Flat, bright... getting affordable" by Dave Chappell [TCP Fast Lash, August 2002], under the *Satellite* typewriter 1811 review, he says "The power cord is a three-pronging type." I assume it is grounded, or three-prong connector he is talking about, right? Now, this is a technical publication isn't it?

No name supplied

security, and proprietary types might be difficult to find.

That's why we mention it.

**The price is right**

I read about your reply on the September issue of TCP [Recent Letters]. In it, you mentioned that "a one-year old Canon G2 digital camera was \$9,800 yen (equivalent to \$1,125) (shipped to \$1,299 in retail stores here."

For one thing, Canada Customs might levy import duties and taxes on items brought abroad, so these potential buyers need to be taken into account.

In the Greater Toronto Area, there's a way to bring the G2's retail price closer to the Japanese price. Nine months ago, all the retail stores were selling the G2 at \$1,249 (about \$1,500 including taxes), and some of them were out of stock.

I ended up buying one at a computer parts outlet at Markham, Ont., for \$1,425 including taxes. The same outlet is now

selling the camera at \$1,150 while most retail store prices remain unchanged at \$1,299.

Regards,

Johnny Cheung

**Too little Gensho**

At first I was excited to see a review of Gensho Linux in your publication, as I do think it is a great system (despite a few bugs, but hey, it is a young child), but after reading it, I was pretty disappointed.

There was little talk in it about the true power of *Paragon*, and the advantages it

has over various other package management systems (such as RPM) such as being able to set 154 variables to eliminate unwanted packages/files.

Also, there was no mention on how Gensho will be one of the first drivers to implement GCC3.2 with version 1.4 which is expected to come out within a week.

Finally, to get properly, the scripts to compile packages are called *ebuilds*, not *make files*.

Cheers,

Paul Rowlett

dave Dusselle replies: Thanks for your letter. We're sorry you didn't understand and perhaps we should have explained it further for those new to computing. When we write "three-pronging type," it's because we don't mean "typical (most common)." A minor point, perhaps, but our readers might have to replace a power cord



## Canadians spending more time online

A recently released Statistics Canada (www.statcan.ca) report shows that Internet connectivity in Canada is up four previous years, and suggests that the trend will keep growing.

The study says that almost half of Canadian households have Internet access, while 49 percent connect to the Net in other locations, like the office, at school, or at their local library. Approximately 30 percent of Canadian households who access the Internet do so through a high-speed connection, which leaves 72 percent, better than four mil-

lion homes dialing up.

Low-income households show the largest proportional growth in Internet access relative to other income brackets. 31.6 percent of low-income homes now have Internet access, which is almost triple the 1997 rate of 10.4 percent.

By contrast, the highest income households are overwhelmingly online, with 82.3 percent having access, compared with 51.5 percent five years ago.

The report details down Internet use by income quartile, with the lowest having a household income of \$21,800 or less,

and the highest with an income of \$70,800 plus. Internet use increases relative to household income, with the second quartile seeing an increase from 18 percent Internet penetration in 1997 to almost 52 percent in 2001. Similarly, the third quartile increased its 32 percent of households with Internet access in 1997 to 70 percent in 2001.

Twelve percent of regular Internet users reported that they had taken an online correspondence course, while almost half use the Net to do research, solve academic problems, or correspond with teachers

or education administrators.

Similarly, one quarter—or 1.5 million—of households that use the Internet had at least one member using the Net at home for business.

Alberta and British Columbia showed the highest percentage of households that regularly access the Net, with 65 percent online. B.C. also recorded the highest proportional growth of regular Internet use, both from home and from other locations, as did Ontario and Quebec.

—Canadian computing.com

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# WHAT'S NEW

In addition to its digital video features, Canon's (www.usa.canon.com) new Optura 2000C DV captures still images, which can be printed out on a Canon printer linked by USB cable—a feature more typically found on still digital cameras.



The camera has four recording modes: digital video 1.33 megapixel photo, motion JPEG (MJPEG), and digital photo (a lower resolution setting suitable for Web and email use). The Direct Print feature allows users to select photos for

printing, crop images, and borders, and print multiple copies if desired. It has 108 optical zoom, image stabilization, and two options for low light shooting.

The Optura 2000C DV has a suggested retail price of US\$1,699.

ACB Systems International Inc. (www.acb.com) has released **ACB PhotoSketcher Plug-In**, which allows Adobe users to make panoramas by joining a series of digital images together.

The software was developed by Sanyo Electric Software and is being distributed by ACB. Once installed, users can access the plug-in through the Extras menu of Adobe's company flagship image-editing program. The plug-in automatically aligns photos to create the panoramic

image. Users can adjust the alignment and choose between flat or 360-degree (fish eye) formats.

The ACB PhotoSketcher Plug-In is available from ACB's Web site for US\$29.95.

**Das Technology** (das.com) has announced the release of **UKMail**, software designed to integrate Microsoft Outlook and Outlook Express mail accounts and address books to a Linux server. The program operates as a networked system on top of POSTFIX mail server, and includes client-side software to interact existing mail and addresses from the desktop-based mail programs and transfer them to UKMail on Linux. Firms allow users to access all of their messages and address book information over the Internet, via a Web browser.



UKMail has also been integrated with Das Technology's LSP, which supports Windows NT or 2000-based servers to Linux. According to Das, LSP transfers all users, groups, passwords, shared passwords, permissions, Web and FTP directories, and DNS configurations to Linux automatically.

**Plasma Systems Inc.** (www.plasma.com) has added to its line of flat-panel monitors with new 19-inch and 20.1-inch displays. Both models include analogue and digital inputs, and are compatible with an optional Video-DI accessory that adds TV tuner and S-video inputs, for connecting to a DVD player, game console, or for watching TV.



The 19-inch display has a built-in USB hub for connecting to keyboards and other devices. It offers 360-degree horizontal and vertical viewing angles, and SXGA (1,280x1,024) resolution. It has an estimated price of US\$950.

The 20.1-inch display offers SXGA (1,600x1,200) resolution and 170-degree viewing angles. It carries an estimated price of US\$1,495.

Both monitors come with a three-year warranty.

Continued on page 48

## Spotlight

### Player puts video in a handheld

**Archos Technology** (www.archos.com) has introduced a handheld device it describes as "moving to the palm." The Archos Jukebox Multimedia PC combining an MP3 audio player with photo and video viewing capabilities, based around a 29 GB hard drive.

The unit measures 114x82x28 mm (4.5x3.2x1.1 in.) and weighs 290 g (10.2 oz.) with the battery pack. It features a built-in monochrome, 1.5-inch LCD screen, and output jack to connect it to a TV for viewing photos or video.

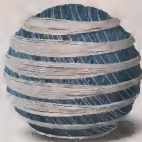
All included separation connector allows for file editing devices, such as the Photo Studio, for downloading images from memory cards to the hard drive for viewing on the colour LCD or on any TV. Archos says it plans to release a module that will turn the device into a digital camera, a scanner, a media for



storing video clips, a data gateway, and a resampled access drive.

The device connects to most computers via USB 1.1 (optional USB 2.0 and FireWire interfaces also supported) and is Windows and Mac compatible.

The Jukebox Multimedia PC has a suggested retail price of US\$99.95, or US\$118.95 (equipped with the Photo Studio, which is also available separately, for US\$49.95).



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# Illustrator vs. CorelDraw: which one is for you?

By Jeff Evans

With the release of the latest version of CorelDraw Graphics Suite in late July, following the release of Adobe Illustrator 10.0 in January, the two heavyweights in vector illustration software are once again facing off to become the tool of choice for designers, illustrators, and Web publishers.

In this article, we'll assess the strengths and weaknesses of these two flagship illustration applications and long time fans, and draw our conclusions.

## Adobe vs. CorelDraw: The history

John Warnock intended Adobe in 1982, and his company—in its way with Apple—essentially created the desktop publishing market. The PostScript page description language brought a professional level of typesetting and image output capabilities to the personal computer, and Adobe followed up with a personally important tool for illustrators when it released its first version of Illustrator in 1986, initially only for the Apple Macintosh.

Corel, founded by Michael Cojocaru in 1985 to offer desktop publishing solutions for the MS-DOS computing platform, introduced CorelDraw in 1989, striving to fill the important vector illustration niche on the MS-DOS PC. That Illustrator had pioneered on the Mac.

Over the past 13 years, these two programs have dominated the vector illustration market, and for the last decade have competed head-on in the Windows market. Adobe has clearly leveraged its comprehensive library of professional graphics and multimedia products, establishing nearly seamless user interface and file compatibility standards across its entire product line. This has led most professional design and publishing firms to standardize on Adobe as a design software platform.

**Adobe Illustrator 10.0**  
 From Adobe Systems Inc.  
 Price: \$250, \$200 (upgrade)

While Corel was distracted during the late '90s by ill-considered forays into Java, Linux, and office suite publishing ventures, Adobe systematically carved out the Windows software market, raising up most of Corel's professional and corporate customer base.

As it stands now, Adobe is unquestionably the strongest company by an order of magnitude, and is also far more widely accepted as a professional software brand. But in Illustrator the better

**CorelDraw Graphics Suite 11.0**  
 From Corel Corporation  
 Price: \$250 (one upgrade)

vector illustration program, or does Corel still stand as its original product category, the all-in-one graphics suite?

## Adobe Illustrator 10.0

We received a copy of Adobe Illustrator 10.0 back in the spring and have had a few months to work with it. Running on a minimal 350 MHz Pentium II powered system with 128 MB of RAM, Windows 2000 Pro, and connected to a Hewlett-Packard PostScript laser printer, Illustrator's strengths are still apparent, even on an older PC: incredibly good typographic tools, beautiful PostScript output, a uniform user interface that is very compatible with Photoshop and other Adobe software, and generally good integration with Web publishing features.

The best new features of version 10.0 include the Symbols support. You can make a complex object, define it as a sym-

bol, store it in a customizable palette, then use it multiple times, in one or many documents. When the symbol is modified or replaced, every instance of it in use in the documents is likewise changed. A great production process improvement.

A number of illustration tools have been introduced or improved. Among the coolest are a lens flare special effect, and Liquify brushes that quickly create complex twisted shapes from simple originals.

Of special interest to corporate print or Web publishers and legal or institutional users, is the ability to easily link Illustrator's templates to a database. For the small design house or small business, this feature is less useful than it might be, as it requires some expertise with AppleScript or Macintosh Visual Basic. However, for companies with database programmers available, the feature alone makes Illustrator 10.0 worth the purchase.

This version also makes life easier in some ways for Web designers, as it integrates HTML, vector, and bitmap images in a single composite image, allowing the best combination of those three information formats. The result can be striking but efficiently compact graphic downloads. However, Illustrator still lacks original, case-by-case tools for creating common Web effects such as rollovers or animations. This lack is a significant omission, and we hope a top priority to fix for the next version.

Illustrator is the well-thought-out illustration software standard for professional designers. It still has a fairly steep learning curve, and a user interface and feature set that is complex and often confusing to master at the pro level. However, as our experience it is extremely stable and bug free on both the Mac and the PC. As well, third-party publishers offer a wide range of "how-to" books for this application. Such support was timely needed, but when it was, it was fast and expert. Adobe offers 90 days of phone support on registration, plus additional pay-as-you-go or annual support contracts.

About the only real drawback with Illustrator for the student or semi-pro is its price, which remains at a professional



## Other vector graphics software: Deneba Canvas 8

There are plenty of other creativity, design, publishing, and animation programs that are built around vector graphics. They include presentation and project management programs (Microsoft PowerPoint and iMovie), 3D animation software (LightWave, Maya, and Softimage) and computer-aided design (CAD) software. However, the most notable alternative to Adobe Illustrator and CorelDraw for print and Web publishing is Deneba's ([www.denebasoft.com](http://www.denebasoft.com)) Canvas 8 for Mac OS or Windows. It's an excellent all-round vector and bitmap design package. A free evaluation version can be downloaded from Deneba's site so you can try before you buy. We looked at the latest evaluation version of Canvas 8, and found very powerful, scripting and automation features; improved Mac OS and Windows XP consistent interfaces; better pixel painting tools, such as flexible gradient fills; and greatly enhanced typesetting and better vectorization controls. Canvas 8 is technically excellent and enjoyable to use and worth considering, especially for students, home office or small business users and pros alike. Canvas 8 for Mac or PC can be purchased online from Deneba for about \$165 for the standalone version (or \$225 for the registered download version), and offers competitive upgrade to registered users of Corel or Adobe products.



—Jeff Evans

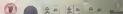
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# DIY animation studio a reality

Latest wave of software enables Hanna-Barbera wannabes

By Einar Torenson

Last year around this time, I had the distinct pleasure of spending with John Willco, longtime animator at the National Film Board of Canada. When it was his turn to hand out the Oscar, you've never heard of Willco, you've seen his films. *Special Delivery* and *Tog Down's Halo*, made in 1978 and 1979, respectively, often fill time on the CBC TV. The charm of these films has not been diminished by the intervening decades.

An early and enthusiastic proponent of digital animation tools, I asked him how long it would be before anyone could create an animated film using, say, \$5,000 in computer equipment. "We're probably already there," he said. "Raise it to \$10,000 and you've got some show rooms."

Proving being what it is, choosing the hardware for your own cartoons is no

longer a rather boring proposition. That \$5,000 can now go even further than Willco's imagination. Processors have gotten faster and cheaper, as 80-CPU hard drive can be had for \$200, and RAM is as cheap as its ever been.

The real stumbling block is deciding which software to get. The task is even more daunting as recent releases, even expert and expert many more file formats than before and include more features that professional animation have come to expect. In attempting to make their products appeal to more people, it just makes the selecting the right application more confusing.

To get a better grasp of those choices, I looked at Toon Boom Studios, After Effects 5.5, and Flash MX—three animation packages I had never used before, but which seemed to provide quite a bit of bang for the buck. All run on both Macintosh and Windows platforms.



It should be stressed that, regardless of software, making good animation is hard work. No one has yet created a computer that features a bag and "animate" button. As all-powered as these programs may seem, it's good to remember that the history of animation is dotted with the development of new time-saving tricks and shortcuts, some of which even made it easy.

It's also worth remembering that many of these new technologies trans-

formed how animation was created and perceived. The most significant of these is the old, clear anime that they passed the way for less ambitious animation of multiple objects or characters, and therefore more elaborate imagery.

Invented in the mid 1930s, this method is a truly defined the look that most people think of when they hear the word "animation." It's the technique that most computer animation programs try to emulate.

## Boom time

Montreal-based Toon Boom Technologies produces Toon Boom Studio, the descendant of its original and current flagship products, The Inks and 1/2 Animation. These two programs were oriented more toward video production television and film work, and the prices reflected that. It's likely

Continued on page 20

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## BY animation studio a reality

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the growing interest in Web animation prompted the creation of Toon Boom Studio, a cheaper, point-and-click version of its look-alike.

Toon Boom's software has always used mouse-based rather than keyboard graphics, that is, drawings composed out of pixels but of mathematical representations of lines, curves, and fills. The many advantages of this are smaller file sizes and the ability to infinitely stretch or blow up an image and retain a low loss. This is ideal for style animation, but not so good if you want to use textures as unaltered visual effects, after all, there's only so much you can do with flat colors and gradients. You can support textures, but their use is pretty much relegated to backgrounds, anything more extensive and you might as well use a different program.

Of the packages here, Toon Boom Studio's user interface and process is the most faithful to how animators work, but it's done with a light enough touch that it shouldn't accumulate those who

lack formal animation training. For example, seasoned animators are used to working with a field guide, a grid that determines the usable space on a sheet of paper depending on physical factors like how tightly the camera will be focused in, the size of the paper, whether the final destination is film or video, and so on. On the other hand, newcomers working on Web animation may not care to reach about using a field guide (it can be toggled on or off with a simple keyboard shortcut).

Along the same lines, there are some features that were born of studio production needs that are nonetheless useful even for beginners. Organizational features like colorized columns, styles, sounds, and templates are welcome. For example, if you have a particular shade of red defined as "Red Sea Serpents Scales" and you later decide that the evil sea serpent should be green, you need only change the default color to replace every instance with the sea serpent in it.

However, it is strange that the people behind such an animator-friendly program would build it in other almost

total areas. My most frequent obstacle was that the toolbar buttons that serve in one look as if they're photos; I had to keep reminding myself that the first icons were in fact movable. On a more practical level, I was a little disappointed with the auto pan, which allows you to (fill in the blank) with a color or gradient over several frames. The feature works just fine, but there's no progress indicator, save for the base position.

## Flash forward

Macromedia Flash doesn't need any introduction, but what few people real see (or remember) is that in 1996 it was a vector-based application called FutureSplash Animator (until the cat growth of several years of design and more changes). Within half a year, the company that produced it was acquired by Macromedia and the program was renamed Flash.

I mention this because Flash has evolved to the point where it's difficult to remember that its primary purpose was animation, now it's a tag of war between animators and scripting. It's telling that in Flash MX's opening

screen, the drawing area doesn't show how the screen is in Toon Boom Studio. On the other hand, that's also Flash MX's biggest advantage over other programs you can make your animation interactive.

Also the Toon Boom Studio, Flash MX has modest system requirements (200 MHz Pentium processor, 64 MB of RAM, and 85 MB of hard disk space) and similar organizational tools for consistent colors, templates, and even reusable objects.

The trouble objects pose to the fundamental difference between Toon Boom Studio and Flash MX: Toon Boom's design doesn't encourage reusing or "tweening" objects (interpolating the changes between an object's original and final shapes, colors, and position), whereas Flash animation is all about the tween. One could say it's like the difference between a fully-annotated production like *The Lion King* and least of animation like the *Pewepuff* Gork, but that's not entirely fair. Done well, you can produce excellent results using Flash's tween functions, without

Continued on page 20

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# DIY animation studio a reality

Continued from page 26

proper use, you can get a strangely disoriented effect, where body parts don't seem to quite be connected.

Currently, while Flash MX seems to lean toward a more assembly-line approach to animation, some of its drawing tools tilt toward a quieter aesthetic, most notably in the form of single, disconnected stroke lines and stippling that create blocky abstractions well reminiscent of "Kirby" dross. These styles have programmable parameters that open up all kinds of creative possibilities.

## Special effects

If Flash MX can't quite decide if it's for animation or scripting, After Effects is a pretty clear Adobe's language for the post-entire in "the essential tool for motion graphics and visual effects," which kind of leads into animation in a halfhearted way. That said, After Effects is hands down the most complete package of the three in terms of creative possibilities.

I have to admit, though it may seem strange, that there is more room to dis-

proportionment. If Flash MX's commitment dampens the idea of drawing, it's hardly an afterthought in After Effects. Like Flash MX, After Effects arranges its multiple layers as tracks on a timeline, with a hierarchical structure including different parameters for each object. (The in-house studio can use the animator's language: timeline, the exposure sheet.) And rather than the more formulaic look of Toon Boom Studio, After Effects looks far more technical and intimidating with its array of panels and controls, and the time-saving steps for your work (it's also significant that After Effects barely has any drawing tools to speak of, encouraging you to import pre-existing images and video clips). Accordingly, the learning curve is also steeper.

But I've always lessened my expectations of animation, and After Effects simply has more room to play in. Like most other Adobe products, After Effects works with both bitmap and vector graphics, but its first love is the pixel. That gives it far more flexibility in terms of styles and techniques. Whereas Toon Boom Studio and Flash MX stick to cell animation, After Effects makes a point

to work with any other technique, provided you can photograph it.

Most interesting is the way After Effects treats a scene as if it's 3D. Like Toon Boom Studio, layers can be arranged along a Z axis to simulate a multipane camera, which creates parallax and depth-of-field effects. After Effects goes beyond that, however, allowing you to mix 3D and 2D elements, and place cameras along motion paths or have them track objects.

Watch the opening to *Business Beyond* (which combines traditional and abstract animation) and compare it to John Willden's *Energy Liquid* (which uses puppet photography, and compares generated imagery)—though they are at opposite ends of the stylistic spectrum, both used After Effects to pull all of these

elements into a finished film.

After Effects integrates nicely with other Adobe applications: Photoshop and Illustrator objects can be taken apart and manipulated directly, and all of the Photoshop layer effects and most of its filters are available, providing occasional lighting effects, blurs, and tricky colour or optical effects. Furthermore, Premiere projects can be imported directly.

After Effects' real power comes from features a borrow from 3D animation packages, like Softimage(XSI) and Maya. Expressions allow you to create programmable behaviours for objects. For instance, if you wanted an animated globe to spin faster as a character gets closer to it, you can drag and drop elements in the timeline to create a script that automates this. Parenting allows one object to exert influence on another (a common example is the way a boom which a planet as it revolves around the moon).

Most interesting is the way After Effects treats a scene as if it's three-dimensional. Like Toon Boom Studio, layers can be arranged along a Z axis to simulate a multipane camera, which

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creates particles, and depth-of-field effects. After Effects goes beyond that, however, allowing you to mix 3D and 2D elements, and place cameras along custom paths or have them track objects. Multiple lights can be placed in a scene, aptly casting shadows. Objects travelling along defined paths can be oriented so they always point in the direction they're travelling.

These features just scratch the surface of what After Effects' abilities. Like other Adobe products, After Effects has the blessing and curse of having more features than most people know what to do with.

#### A studio on your desk

While this article was gestating, I was introduced to Sandra Corvino, author of *The Flash Animators*. He told me about the time he showed Macromedia Flash and a graphics tablet to his brother, the creator of *South Park* and, as Corvino puts it, "Hanna-Barbera's right hand man for 40 years." Tadamoni said, "If we had this tool back then, my biggest fear would be that people would have ripped their self and started their own studios."

It occurred to me then that this is where we are not in a position to just create our own animated shorts, as I'd asked Weldon a year ago, but to create our own studios. More than a few people have managed to succeed as independent animators using traditional tools, and the lower overhead of digital animation tools just makes it a more viable option.

Working animators will tell you that no single software package does every thing, and it's not uncommon to use more than one program for a project—a task made easier by the increasing interoperability between applications and file formats. (The three programs we've tested here export, at minimum, QuickTime and Flash files.) After Effects and Flash MX also handle a wealth of other formats.) All you have to do is find out what fits in best with the way you work, and keep drawing. ☺

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# Motorola chief has unique view of wireless industry

By Geoff Whelan/lat

**T**he Canadian mobile phone market is undergoing big changes at the moment—and few companies are in a better position to appreciate the nature of those changes than Motorola. Frank Iano, the president of Motorola Canada (mm.motorola.ca), counts four of the country's major mobile phone service providers as his company's handouts, and he sees an evolutionary shift underway in the kinds of services they are offering.

To start with, all the providers are in search of greater profitability, which means trying to get more money from existing subscribers, while working to attract the type of new subscribers that will produce the greatest profit.

Maw says that one element in this quest for profit lies in putting less emphasis on prepaid plans (where users buy a prepaid service voucher) for

mobile phone services. Most providers had great hopes for the prepaid market as a way to bring in lots of new subscribers who might later switch to a more profitable post-paid plan, but were seeing that it hasn't worked out that way.

Instead, a significant proportion of prepaid users are those who want a mobile phone "just for convenience," leaving it in a drawer as their companion most of the time. For companies such as Microcell (which offers the Fido service) and Telus Mobility, a subscriber who keeps their mobile phone with their flashlight and candles isn't going to generate a whole lot of revenue.

And for Microcell, which is fighting for its very life right now every penny counts. At the time of writing, Microcell's share price had dropped to around \$0.05, and the company was admitting publicly the significant challenges it faces.

Maw suggests that Canadian wireless carriers are actually better than many of their U.S. and European counterparts. He says they understand the "build out" of their next-generation wireless networks early enough that they could be completed before a virtual capital expenditure boom hit the telecommunications sector 18 months ago, when their share prices plummeted and profits became more scarce. That has ensured that all four of the major Canadian wireless carriers were in a position to roll out more than 1.5 million wireless data service in 2001 and 2002.

As a result, Rogers and Microcell are able to offer GPRS services, while Bell Mobility and Telus Mobility are offering GPRS services. Both types of service give users higher wireless data speeds and the ability to use wireless devices that are always on and ready to receive data. This pleases Motorola, because the newer offerings create more demand for

new handsets and wireless data devices.

The success of that strategy is evident in the figures Iano offers for mobile phone sales, 60 percent of which he says are made to existing subscribers. Given that most handsets are sold to people who are upgrading what they already have, the really important thing for the industry is to create incentives for them to do so, rather than spend all their resources in trying to attract those people who currently don't use a mobile phone.

And Maw suggests that it will not only be the technology on the new handsets—and the capabilities of new networks—that will drive these users. "One of the big things these days is being at the leading edge of not only technology but marketing," he says. "One of the biggest areas to market is to people—offer innovative products that are truly exciting, but they also speak the language of youth." □

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 <b>SONY</b> Vaio FX210 Windows XP Intel Celeron 900, 14" TFT 128M, 15GB and DVD/CDRW Factory Refurbished	 <b>COMPAQ</b> Presario 1701S with Win2000 Pentium 3-850, 14" TFT 128MB, 20GB and DVD Factory Refurbished/Online Auction Item	 <b>COMPAQ</b> N600C with Win98 Pentium 3 866, 14" TFT 128MB 15GB and DVD Factory Refurbished/Online Auction Item	 <b>TOSHIBA</b> Tecra 8100 with Win98 Pentium 3-700, 14" TFT 128MB, 12GB and DVD Factory Refurbished
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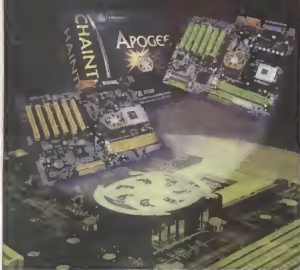
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# APOGEE

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**Headline ad: Drawing with Macrom...**

**Continued from page 36**

The vector objects we were creating (a vertical line, the 180- and 90-degree lines) pointing device for selecting from options, moving windows, and other user interface activities, as well as a good drawing tool.

If you're going to do any kind of art work or design on a PC or a Mac, we strongly recommend this tablet as an essential creative and productivity aid.

## Acu Tablet PC

The Acu Iireedtable 100 Tablet PC is an ultra lightweight (about 1.5 kg, or 3.3 lb) subnotebook with a Mobile Pentium 4 processor, 128 MB RAM, 16 MB graphics RAM, and a 14-inch LCD screen. The screen is convertible, rotating into either a standard clamshell screen and keyboard configuration or an outdoors-facing screen only pen computing laptop, for handheld computing on the move.

We spend most of our time with the Acu Tablet PC walking around town or sitting at Starbucks and sketching, using Corel Painter Classic software (and an old version of Painter 5), and the pressure-sensitive pen. Although we made some use of the full Tablet PC suite of features (the frequent and handwriting-recognition software, especially), we were captivated by the convenience of the Tablet PC as a drawing tool. It really is the true electronic sketchbook we've ever had in our hands.

Drawing, writing, and printing pictures with the Tablet PC is perfectly natural and simple, requiring very little learning time. The one limitation we noticed was that the maximum resolution for the 14-inch screen is 1,024x768 pixels, fine for running Macrom Office applications or a Web browser, but slightly restrictive to a designer or artist's desire for ever higher screen resolution.

When Tablet PCs hit the market in Canada, probably in late November, they will be aimed mainly at the business markets where workers use PCs on the move, such as warehouses, courts, and health care industries, and those "urban commuters" who go from one meeting to another.

Regardless, point the word, all you computer artists out there also appreciate all of LCD screen, tablet, and pen-and-ink ultralight notebook PC, is the ultimate computer drawing tool. ☐

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Model

**7VJL 9EJL1**

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Manufacturer



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# WHAT'S NEW

Continued from page 19

**Logitech** ([www.logitech.com](http://www.logitech.com)) has announced three new keyboards with features previously only available in its top-of-the-line cordless models.

The Edge Keyboard and the Internet Navigator are both PC and Mac compatible with USB and PS/2 connectors, and are priced at \$25.95 and \$49.95, respectively. Both models incorporate buttons for launching applications, multimedia controls, and a cool wheel.



The Access Keyboard meets out the new line as a basic PC-only model with a PS/2 connection, priced at \$24.95. It includes enhanced F-key functions but not the multimedia and other navigation controls.

**Winning**, Pan-based **edabit Inc.** ([www.edabit.com](http://www.edabit.com)) has released **edabit 1.0**, a plug-in that allows users to create pictures in picture and split-screen effects. **edabit 2.0**, **edabit** is available for US\$29 from edabit's Web site. The new plug-in follows the release

of **edabit** 1.0 and **edabit** 1.0 from edabit earlier this year. All three plug-ins require Mac OS 8 and Windows 3.1 or higher.

**Symantec Corp.** ([www.symantec.com](http://www.symantec.com)) has announced the latest version of its flagship anti-virus protection software, **Norton AntiVirus 2001**.

The latest version scans instant message attachments to protect users of IM software from malicious code in files transferred through the services. The feature supports Yahoo! Instant Messenger, AOL Instant Messenger, PCIM Messenger and Windows Messenger.

In addition, the software contains worm-blocking technology, which the company says will detect email worms and Trojan horses, and remove them without interrupting the user's work.

The new version is scheduled to ship by mid-September and will carry an estimated retail price of \$49.95, or \$34 for the upgrade from previous versions of Norton AntiVirus or a competitive antivirus product. A Professional Edition is also available, which added data recovery and data cleanup features, for \$99.95, or \$69 for the upgrade. The Pro Edition offers a license for two computers.

**American parents** worried by recent child abduction stories may be able to ease their fears with technology. **Wherby Wireless Inc.** ([www.wherbywireless.com](http://www.wherbywireless.com)) has announced the availability of its new **GPS Locator for Children**, a wrist-worn locator device that allows parents to use the Internet, or telephone to determine the whereabouts of their children.

The device operates on a nationwide PCS network and uses Global Positioning System satellites to pinpoint a child's location, typically within about a minute

and to a radius of approximately 10 m or less, according to the company. The location is able to directly dial 911 in case of emergency and includes paging capabilities for non-emergency situations.

Presently, the Wherby device and service are available only in the U.S. The GPS Personal Locator for Children sold for US\$199.95, plus a monthly service fee for the company says will be comparable to monthly plans for cellular service.

Wherby's future plans include a similar device and service for Alzheimer's patients as well as devices for tracking assets such as cars and other valuable items.

**MacSpeech Inc.** ([www.macspeech.com](http://www.macspeech.com)) has released a new version of its speech recognition software for Macintosh users. **Listen 1.5** is designed to run on both OS 8 (version 10.1.5 or greater) and 9 P.P., and allows users to share profiles between the two operating systems, according to the company.

The new version also offers a transcription function, reading voice from AIF and WAV files into text, which allows users to record speech with a digital audio recorder for later processing, according to MacSpeech.

The software can be downloaded from the company Web site for US\$99. Users of previous versions of Listen can upgrade for US\$59.95.

For those who feel the need to watch Web links, or who like to watch TV and surf the Web at the same time, a new, surprisingly simple tool is now available: the **WebView Mirror** ([www.dreamware.com](http://www.dreamware.com)). Based on a tool designed to help help language interpretation, the **WebView Mirror** is actually two mirrors at an adjustable angle to each other, allow-

ing users to see a non-reversed image of what is behind them.

The mirror weighs approximately 0.88 lb (1.5 lb.) and offers a number of mounting options, according to its developer, **Clear View Innovations**. Depending on the mounting option chosen, prices range from approximately US\$59 to US\$79.

**Other World Computing** ([www.otherworld.com](http://www.otherworld.com)) has introduced the **Mercury Pro**, an external DVD-RW and CD-RW interface drive. The company boasts it is the first to allow users to burn DVDs with Apple's iDVD software.

The Windows and Mac-compatible device writes to 4.7 GB DVD-R discs at up to 2x speeds, 4.7 GB DVD-RW discs at 1x, up to 700 MB CD-R discs at 8x, and up to 700 MB CD-RW discs at 4x speeds, according to the company.

The Mercury Pro is priced at US\$199.99 and is available exclusively from the company's Web site. A FireWire/USB 2.2 version is also available, priced at US\$279.95.

**Electric Wave Inc.** has released **Bulldozer for Net**, a software package that allows browsers to display their own data location Web services. The package is based on **Bulldozer**, Electric Wave's top-code online search software. **Bulldozer for Net** allows users to integrate a number of data location services from one centralized database—for example, a Web-based locator and an integrated voice response application can operate from the same set of data, according to the company.

Prices for the application start at US\$1,499, plus an additional US\$700 to add Canadian postal codes to **Bulldozer's** database.

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**Lower toolset path: Photoshop within...**  
*(Elements 2.0, page 4,*  
*generally, particularly combining two*  
*laborious steps.*

Although Curves are sorely missed there's consolation in such tools as **Adjust Backlighting** and **Fill/Flash**, which darken the brightest parts or brighten the darkest parts of an image, respectively. Also, the **QuickPo** dialog box, new in Elements 2.0, gives easy access to all basic image adjustments: brightness, contrast, focus (blur or unsharp mask), and rotation.

The **Color Variations** dialog box, some what spread up for Elements 2.0, offers variously sized thumbnails to choose from. It's more robust than the Photoshop equivalent, although the thumbnails are a bit small.

Photosmerge is an entertaining novel try, allowing you to quickly stack multiple files together into a panorama, with automatic perspective correction and blending. In Elements 2.0, Photosmerge is enhanced with support for larger files and more sophisticated fine-tuning controls.

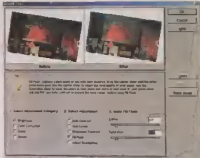
Even so, there's no individual control

over image brightness, nor can we treat images individually once they're part of a completed Photosmerge object. Also, Photosmerge tended to run out of memory when merging more than three images.

The **Picture Package** option is more of an unqualified success, allowing multiple copies of an image to be placed on a single sheet of printout. The layouts are all preset, but there are enough of them to suit just about any purpose.

The **Contact Sheet** function places image thumbnails of all files in a folder on a single printed sheet. You can actually create a Web Photo Gallery, or a Slideshow in Acrobat PDF format. And in Elements 2.0 you can send images directly to email with automatic downloading if required.

While Elements lacks the powerful Actions scripting of Photoshop, it has a comprehensive Batch processing dialogue that lets users easily convert, rename, and rename groups of files. Similarly, while making sprays are much simpler than in Photoshop, Elements 2.0 adds a Selection Brush that lets users paint freestyle masks.



FB Flash is one of several tools in Photoshop Elements 2.0's Quick's dialogue.

This is all good stuff, and well targeted at the average non-professional user. The only notable weaknesses of Elements are the user interface peculiarities it shares

with Photoshop itself.

For example, the unchangeable tool and settings palettes are free floating, not

Continued on page 72

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## Hands On

Lab Test • Hardware Evaluations • Software &amp; CD-ROM Reviews

## Hooking up

New cards connect high-speed peripherals to your computer

By Sean Carroll

No matter how loaded your computer is, you're never going to get absolutely everything you need right into it, are you? You want to digitize cameras, MP3 players, print out, and more are all things you'll need to plug in. In the past, these external devices usually hooked up to your PC via its serial or parallel connectors, but those two trusty ports are giving way to newer, much faster interfaces like USB and FireWire.

This month we look at the newest cards available for adding FireWire and USB 2.0 interfaces to your PC.

**Note on pricing**

We received most of the products reviewed this month directly from the U.S. with pricing provided in U.S. funds. The Canadian pricing we have given was converted from the U.S. pricing, and as

such is subject to change as the exchange rate varies, there will also likely be fluctuations from store to store and region to region. The pricing is intended to give readers an idea of the price to expect rather than as a definitive price point.

**FireWire**

Officially known as IEEE 1394, this connectivity standard is better known by the much catchier FireWire, named after its relatively blazing speed. When it was introduced, it was designed as a plug-and-play replacement for the SCSI interface that would compete with the much slower USB 1.1 standard. (FireWire checks in at 400 Mbps compared to USB 1.1's paltry 12 Mbps.)

Though it started its life as a Macintosh technology, FireWire has since migrated over to the world of the Windows-based PC, especially for video-related hardware and for external hard drives.

**FireWire for desktop PCs**

To add any of these cards to your desktop system, you'll need one free PCI slot. If you're planning to add the card to a Windows-based system with Windows 2000 or higher, you probably won't even need to worry about drivers, because FireWire driver support should be native. Unless you're using a stripped-down version of the OS (usually configured by your system vendor).

Installation should be very simplified: the available PCI slot, insert the card, then start your machine. Of course,

ask for assistance if you're not comfortable messing around inside your computer. But those who have installed any hardware in the past should have no problem here.

We tested our PCI FireWire cards on a 2 GHz Pentium 4 system with 256 MB of DDR SDRAM and a 40 GB ATA100 hard drive. The system was running Windows XP Professional.

**Adaptec FireConnect 4300**

from Adaptec, Inc. [www.adaptec.com](http://www.adaptec.com)

Continued on page 48



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- Bundled with MGJ VideoShare II SE video-coding software, MGJ PhotoSuite II SE photo software, and a seven-line per FireWire cable.
- Internal power connector is optional, use only if connecting multiple FireWire-powered devices.
- 1-year warranty.
- Versions also available for Mac OS 8.6 and higher (752701-4000, also 015863).



Though it's one of the smaller cards, the Belkin FireWire card still provides three ports, and even has an internal power connector, if you're planning to use a lot of connected devices that draw power from the FireWire bus. If you're using powered devices like hubs and hard drives, you don't have to worry about that, though it works perfectly fine without it. Our connected devices worked just fine, and we were able to get data flowing without any problems.

#### Keyspan FPG-3

Keyspan, Inc., [www.keyspan.com](http://www.keyspan.com)  
(estimated price: \$79 (estimated from 015502))



- Adds one external and three internal ports (one of internal ports creates only two external ports can be used).
- Compatible with Windows 95SE, 98, 98SE SP, and Mac OS 8.6 and higher.
- Bundled with MGJ VideoShare II SE video-coding software and a six-to-four-per FireWire cable.
- 1-year warranty.

The three-and-one design on Keyspan's desktop FireWire card is a nice touch if you have any internal devices that make use of FireWire (they're few and far between, but they do exist). Because FireWire controllers tend to only handle three ports at a time, using the internal port means one of the three ports on the rear of the card will be disabled. As with

*Continued on page 50*

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# Hooking up

Continued from page 49

the other cards, it was fully functional on our Windows XP box as soon as the machine fired up, and we were able to use the hard drive and DV cam within seconds. The card recently had a price drop from US\$58, so shop around for the best price!

## Low IEEE 1394 Model

1026; Low Tempature M4; Inc. www.usahd.com  
Elevated price: \$85



- Adds two external ports.
  - Compatible with Windows 95/5, Mac OS 9/10, XP, Mac OS 9/10 and higher, and Linux/Red Hat 2.4 and higher.
  - Lifetime warranty.
- If you choose Lexia FireWire card,

you're buying Canadian (the company which makes a number of different connectivity products, as based in Toronto). The package is pretty basic, with just the card, a floppy disk, and an instruction sheet included. The floppy comes with a few drivers for older operating systems, but if you're using Windows 2000 or XP, the card should be recognized automatically. The card only comes with two ports onboard and no bundled software, but it is one of the only FireWire cards we've seen with support for Linux right out of the box. Those looking for a more fully featured bundle may want to look elsewhere, but Lexia heads and Canada should both find this card a perfectly good choice on our machine, we had devices connected to the card up and running within no time.

## FireWire for notebook PCs

Adding FireWire to a notebook computer, or a pretty much just made in a PC Card adapter, adds drivers when necessary, and goes in easy. What's a bit tricky, however, is determining the suitability of doing so. If you're planning to add FireWire to your notebook computer so you can

update video from a DV camera, it's worth remembering that the FireWire port isn't the only consideration. Almost more important are the other components in the notebook, like the processor, RAM, and hard drive. If you're planning to use an older machine, you may be getting compromised performance, especially if you're using an older hard drive with less up-to-date specs. You'll get very choppy video capture if your components are spending all their time trying to catch up.

One way to get around your notebook's DV-upgrading limitations is to connect to an external hard drive with a FireWire connection. The drives included in these external enclosures usually feature pretty fast transfer, are very responsive, and often offer up a lot more capacity than you'll find in your notebook's internal drive.

We tested notebook FireWire cards using a Toshiba notebook with a 700 MHz Celeron processor and 128 MB of RAM. In addition to the internal 10 GB hard drive, we also tested the cards using an external Maxtor 3000RIV hard drive and a Canon DV camera.

## Adapter FireConnect for Notebooks

From Adapter Inc. www.adapter.com  
Elevated price: \$104 (includes 1000 FPS)



- Active FireWire ports to PC Card FireWire.
- Comes bundled with software, and a 6-to-10-pin FireWire cable.
- Compatible with Windows 95/5, Mac OS 9/10 and higher.
- Lifetime warranty.

The Adapter FireConnect for Notebooks was the card with the fastest range of capabilities on the notebook end of things, with three ports right on the card and no problems with data transfer—we saw almost no dropped frames with the card. Instead, into the notebook, it worked just the way it should, with automatic recognition by Windows 2000 and proper functionality with both hard

Continued on page 52

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<h3>Fast Intel P4 System</h3> <p>Intel P4 1700MHz 256K Cache 4GB DDR 512MB 300MHz MHz 256MB GeForce FX 5200 1-Atmos Poppy Drive 16 GB HDD Bioschip 1024MB 6400 AC97 5.0 Sound, 1000MHz Win 98 Keyboard, 1000MHz SPEAKER 750W 17" Monitor 16 GB HDD + Network Card</p> <p><b>\$939</b></p>	<h3>Value Starter System</h3> <p>AMD Duron 1200 4GB DDR 512MB 300MHz MHz 256MB GeForce FX 5200 1-Atmos Poppy Drive 16 GB HDD Bioschip 1024MB 6400 AC97 5.0 Sound, 1000MHz Win 98 Keyboard, 1000MHz SPEAKER 750W 17" Monitor 16 GB HDD + Network Card</p> <p><b>\$679</b></p>	<h3>Loaded P4 &amp; AMD XP System</h3> <p>Windows XP Home with 1000MHz Pentium 4 1700MHz 256K Cache 4GB DDR 512MB 300MHz MHz 256MB GeForce FX 5200 1-Atmos Poppy Drive 16 GB HDD Bioschip 1024MB 6400 AC97 5.0 Sound, 1000MHz Win 98 Keyboard, 1000MHz SPEAKER 750W 17" Monitor 16 GB HDD + Network Card</p> <p><b>\$1199</b></p>	<h3>ProSeries G8000, Accessories</h3> <p>802.11b Wireless LAN Card 1000MHz Pentium 4 1700MHz MHz 256MB GeForce FX 5200 1-Atmos Poppy Drive 16 GB HDD Bioschip 1024MB 6400 AC97 5.0 Sound, 1000MHz Win 98 Keyboard, 1000MHz SPEAKER 750W 17" Monitor 16 GB HDD + Network Card</p> <p><b>\$1199</b></p>
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# Working up

Continued from page 32

## Adaptec USB2Connect 3100LP

From Adaptec Inc., [www.adaptec.com](http://www.adaptec.com)

Estimated price: \$79 (estimated from \$75)



- Adds one external and three internal USB 2.0 ports.
- Compatible with Windows 98SE, Win 2000, XP and Mac OS 9.0.4 and higher.
- Firewire variant.
- Two-port version (USB2Connect 3000) with two external and one internal port available for \$95US.

In addition to its FireWire line, Adaptec focuses a USB 2.0 product line with a number of family members. The 3100LP is one of the more value-oriented models in the line, but it still has four ports in the box, but it still has four ports in a three-and-one configuration, which is nice for users with USB devices that connect internally. The card fired up fine and was working almost immediately. We had our external hard drive connected and transferring data soon after that. If you aren't planning to connect a lot of devices, that one makes a great shout-out choice who need more ports can spend a bit more and get the six-port version instead.

## Belkin F5U136

From Belkin Corp., [www.belkin.com](http://www.belkin.com)

Estimated price: \$40 (estimated from \$35/95)

- Adds one internal and two external USB 2.0 ports.
- Compatible with Windows 98SE, Win 2000, and XP.
- Lifetime warranty.

Belkin's bright blue USB 2.0 card installed quickly and easily under Windows XP, pulling the driver automatically down from the CD when needed. We soon had it transferring data



to and from the PC's internal hard drive at a fair clip. The four-and-one configuration is nice for those with a USB device that needs to be connected internally or who want to jury-rig their own (a USB camera hidden under the case, perhaps, if you have a clear side panel). (Note: Belkin also offers a four-port USB drive bay link, model number F5U261, at \$79.95, which front-mounts into your PC using a standard floppy-disk bay, and uses an internal USB connection.) One nice touch: there are lights along the back of the card that indicate when the ports are in operation.

## Keyspan U200P-S

From Inteloy Inc., [www.keyspan.com](http://www.keyspan.com)

Estimated price: \$65 (estimated from \$75/95)



- Adds one internal and two external USB 2.0 ports.
- Compatible with Windows 98, Win 2000, XP, and Mac OS 9.0.4 and higher.
- Lifetime warranty.

At only \$65, Keyspan's four-and-one USB 2.0 configuration is one of the better values we've seen, and as with the others, the one internal port will be convenient for anyone who wants to hook up any USB peripheral on the inside of the box, like an external box. The card installed smoothly and we had data going back and forth between the internal drive and the external Maxtor drive almost immediately. Even if there's no wild punt job to make this one stand out, it's a very functional card at a good price point, and definitely well worth consideration.

## Link USB 2.0 Host Adapter

From Link Computer MFG Inc., [www.link.com](http://www.link.com)

Estimated price: \$45



- Adds two external USB 2.0 ports.
- Compatible with Windows 2000 and XP.
- Lifetime warranty.

The Link card is one of the most basic packages we've seen: two ports on the back of the card, and a minimal set of drivers included on the floppy. Our Windows XP box got the card up and running in no time, but you may need to download a driver to get this one going on your machine. (Link currently supports only Windows 2000 and XP for the USB 2.0 card, according to the company Web site.) If you're running Windows 2000 or XP and you're looking for a very basic solution, this one seems to work just fine—and it's a Canadian, too.

## USB 2.0 for notebook PCs

Driver installation of notebook USB 2.0

ports will require the same software setup as with the PC versions, including a second-based install. The hardware is another story altogether: you decide if one the slot.

We tested three cards using the same Toshiba notebook used for the FireWire cards, coupled up with a Maxtor 3000LZ external hard drive and a Logitech QuickCam Pro 5000 imaging device to capture live video.

## Adaptec USB2Connect for Notebooks

From Adaptec Inc., [www.adaptec.com](http://www.adaptec.com)

Estimated price: \$28 (estimated from \$35/95)



- Adds two USB 2.0 ports via PC Card.
- Compatible with Windows 98SE, Win 2000, XP and Mac OS 9.0.4 and higher.
- Ultimate states external power "not required in most cases." (External power adapter not included).
- Lifetime warranty.

After the quick and easy driver install, the Adaptec USB2Connect worked as expected—the Maxtor drive was automatically recognized by the Windows 2000 notebook, and we were reading and writing to the drive in seconds. The card was able to maintain its connection to the drive at the same time it was capturing motion video from the Logitech QuickCam, and everything worked smoothly. Though it comes with a jack for plugging in external power, the card doesn't ship with the adapter; unless you're trying to power a whole

Continued on page 58

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pole of USB drivers that draw power from the bus itself, this shouldn't be an issue.

## Ergonomics 1/2008-3

Samir Trachsel, [trachsel@math.univ-poitiers.fr](mailto:trachsel@math.univ-poitiers.fr)

Estimated price: \$254 (excludes taxes, title and



- Add-on USB 2.0 ports via PC Card
- Compatible with Windows 98, ME, 2000, XP and Mac OS 9.2.2 and higher
- Power adapter incl., plug-in Internet USB ports
- See user manual

Hyperion's handbook, US\$1 2.95 (and is more expensive than the *Adaptive* version), but it comes with the external power connector in the box—if you're planning to connect a number of unpowered USB peripherals, this addition to the bundle will be essential. From an installation and performance perspective, the card is top-notch: the software-based driver install was quick and painless, and both the hard drive and camera worked perfectly, even at the fastest frame

## Combscard: FireWire and USB 2.0

Sometimes you want to add both new technologies, but you either can't spare the extra space inside the PC, or the money will cost to buy two separate cards. Now, a number of companies are

setting out with combocards that contain both interfaces onto a single PCI add-in card, but also shave a few dollars off the price you'd pay if you bought them separately.

We tested these carts on our Windows XP Professional desktop, and used both of the external hard drives from Master—one FireWire, and one USB 2.0.

## Adaptive DiacConnect

© 2004 Blackwell Publishing Ltd *Journal of Internal Medicine* 255: 109–116

Estimated price: \$174 (converted from GBP)



- Adds Back Feeder ports (two external, one internal) and four USB 2.0 ports (three external, one internal)
- Comes bundled with McAfee Internet S/M virus-scanning software, Sonic MyDVD 5 authoring software, and a Janitor-robot Feeder Guard.
- Internal Supply steel power connector, in case you're powering multiple low-powered devices.
- Compatible with Windows SP2, XP, 2000, SP and Mac OS 9.0.4 and higher
- Free one-month

If you only have one free PCI slot, you somehow need to add four USB 2.0 ports and three FireWire ports to your system, you're on track. The DataConnect definitely qualifies as the most loaded card on the whole roundup, and the good news is that every one of the ports should be usable. The two-and-one and three-and-one configurations mean that

one of each type of port is available externally, while keeping a fair number of ports on the back of your PC, and available for regular use. When we installed this case, it required one restart for full functionality, but then we were up and running and transferring data quickly between our two external drives. If space is at a premium, this bright blue case certainly packs a wallop in terms of value.

**Keywords:** *Self-esteem, self-regulation, self-control, self-regulation, self-control*

*Brassica hirsuta* L., *var. capitata* L.

Estimated price: \$149 (collected from 1954/02)



- Adds three USB 2.0 ports and two FireWire ports (all external)
- Compatible with Windows 10SE, Mac OS X 10.7, and XP
- Internal floppy-based power controller to save you're powering multiple bus-powered devices
- Comes bundled with iCloud Photo Library 5.0, iCloud Photo Library My Content Library, iCloud Cast 5.0 panorama software, and a two-hour gas FireWire cable
- Lifetime warranty

As with the Adaptec combination, the Belkin combo required a reboot before we had full functionality, but as soon as we did that, we were able to transfer data between our two critical hard drives in quite a clip. Though the Belkin used less driver ports overall, it also comes in at a slightly more attractive price point, and sports a lifetime warranty. If you can

need a few of each type of part, the Bellan solution is a great choice.

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From Orange Micro Inc., [www.orange-micro.com](http://www.orange-micro.com)

Estimated price 1.164 converted from 154 rmb



- Add four USB 3.0 (three external, one internal) and three FireWire (two external, one internal) ports.
- Compatible with Windows 7/8, Mac OS X, and Mac OS V, and higher (will work with Mac OS V, but only on USB 3.0 models).
- Comes with up to four (as FireWire cable and one USB cable).
- Bundled with third-party software: iMovie, iPhoto, and iTV Pro (Mac) video-editing software.

Orange Micro was one of the first out of the gate with USB 2.0 cards. The company has developed a pretty thorough line of cards in both the USB 2.0 and FireWire space and this is Orange Micro's new combocard. Because we weren't able to get our hands on the card until just before deadline, we weren't able to put it through the battery of tests—however, if installed on our Windows XP system via firewire, it seems we connected through the card as if it were a standard FireWire device. If our software manufacturers on Orange Micro's offerings in the USB and FireWire categories, check out the company Web site at [www.orange-micro.com](http://www.orange-micro.com). □

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# Small Office Technology

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## Building your business Web site

Whether you do it yourself or hire a pro, there are a few things to consider when creating an online presence

*Of the numerous communications we receive, one of the most frequently asked questions is "How do I pick a Web site designer or host for my business?" We let Technology Reviewer Dave Chappelle out of the TCP Test Lab long enough to find some answers for our readers.—Editor*

By Dave Chappelle

After years of avoiding the inevitable, you've finally decided to create an online presence for your business. Where do you start? First, you need to understand that there are two main components to the Internet presence equation: design and hosting. Other secondary components are important, but for now we'll concentrate on these two.

It's common knowledge that small to medium-size enterprises represent the



largest portion of the Canadian business market. So, there are plenty of services catering to businesses in this category that want an Internet presence—from "free" to price-it-no-object offerings. We've looked at a few.

### Free! hosting

For those with very little capital, you can find free or almost free Web hosting.

You can begin with the free Web space most ISPs (Internet service providers) give their subscribers. It's usually at least 5 MB, which is enough to store some HTML files and possibly a JPEG image or two.

However, personal Web space offered

by ISPs is not set for showing off things like pictures of family, pets, or a new bike, not for commercial purposes.

Most ISPs will shut you down if the traffic to your site exceeds a set limit. Even if ISP administrative actions are too busy to stop you from using the site for business purposes, excessive traffic to your site could prevent many of those who want to visit from being able to do so. Do you really want a potential customer to see the dreaded "page not found" error message?

If you haven't registered a domain name, and don't want to or can't afford to pay the \$30-plus GST to do so, some free hosting sites will give you a URL (uniform resource locator) for your site that looks something like [www.yourname.freehost.com](http://www.yourname.freehost.com).

However, not only can this type of URL be difficult to remember, it's instantly recognizable as a free site and may not inspire the confidence of potential customers.

If you decide to go with a free Web-hosting service, you need to consider its long-term viability. The presence of domain bikers in the last couple of years has proven that giving away a service for free is a difficult business model.

One company that seems to be lead-

## Symantec streamlines network security

By Dave Chappelle

Recognizing that new businesses have staff dedicated full-time to network security, Symantec has integrated multi-function security solutions into a single hardware unit.



Symantec Gateway Security

Model: GWS100, www.symantec.com  
Estimated price range: \$11,990 to \$20,990

With the Gateway Security appliance, Symantec appears to have made a leap forward in network security administration. Regardless of the size of the network, it locates the central management of all security functions in one box.

Designed for small to medium-size businesses, the appliance incorporates the main security preoccupations of system administrators: access control, firewall, anti-virus, intrusion detection, content filtering, and virtual private network (VPN) features.

Other vendors have "partnerships" and "arrangements" with cooperating companies. But ask anybody who's ever tried to install and maintain five or five different security appliances on the same network, and you'll get or catch about the difficulties. Having everything in the same box made by the same company can make network security management considerably easier to all of the features are designed to work together.

An integrated multifunction security appliance also helps control an overall

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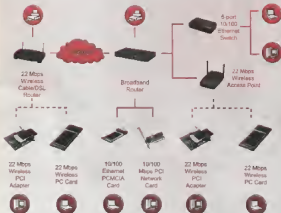
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### Symantec streamlines network security

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"blended threat," such as the recent Honda virus, which attacked both clients and servers and propagated in more than one way.

The Symantec appliance fits in a standard 19-inch rack. Up to eight units can be arranged in a load-balancing configuration for larger networks. A Management Console interface can be installed on a local or remote PC, providing one interface for control and identical configuration of a network, from one to 1,000 nodes. This feature alone greatly simplifies managing the security of a network of any size. Remote control is via the Symantec Raptor Management Console (RPMC), which encrypts data with a 128-bit algorithm.

If a problem arises, the system can be rebooted and reconfigured from a rescue CD, or even from the LCD panel. Restoring network configuration settings can require hours or possibly days of an administrator's time, so it's a good idea—once network security has been configured—to export the settings to a laptop or removable drive for offline storage in case of disaster.

The Symantec appliance runs Linux, but does so as a "black box," so the user doesn't need to know Linux. It can be completely controlled from the front panel using the LCD and buttons. The front panel can be pulled out and tilted up for easier viewing in the often cramped quarters of a secure server room. Inside the unit, hard drives are mounted in arms of four. On the rear panel are four independent Ethernet ports for connecting to and segmenting multiple networks. The unit can be used with DSL (PPPoE) provided a DSL modem is placed in front (upstream) of it. Those familiar with Symantec AntiVirus software know how it makes downloading and installing the latest virus definitions easy. Symantec applies the same ease-of-use in the SGS Live Update feature, with intrusion signatures added to the process.

Symantec resellers and partners provide on-site training, installation, support, and maintenance. Firms that outsource IT services can arrange to have their instructor trained on SGS.

### Intrusion detection

Intrusion-detection systems compare known intrusion-attempt signatures

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### Building your business Web site

Continued from page 52

ing that formula work, however, in forecasting web hosting costs.

Company representative Tom Lee explains, "We don't really make any money on the hosting that we give away for free. We try to offset the cost of hosting those free sites by requiring advertising banners on the sites' pages, but that doesn't really cover much of our cost of providing the service. For the most part, we treat the cost of running the free service as a marketing expense."

Hosting charges get 25 MB of free Web space and can use a subdomain (that includes "brothosting" as its name) or their own domain (.com, .net, or .org), which they have to register and, of course, pay for.

If a client's first site approach is to exceed the bandwidth limit, they can upgrade to one of the monthly pay sites without any interruption, says Lee.

"A small business can set up shop on our free service and never have to worry about anything at all. Our standard service technology allows any size on our system to scale from just a few hits a day,

in tens or hundreds of thousands with out any difference in the speed at which it is served."

Upgrade packages can include more bandwidth, Web space, email accounts, real-time credit card processing support, and priority phone support.

"We don't force people to upgrade," says Lee, "we simply let them try it out, and then hope they will like our service enough that they will want to upgrade. In a way, it is a little bit like the shareware model."

A similar service is offered by Eyringston-based United Net (unitednet.org). It too hopes users upgrade to services after using the free offerings. U.S.-based Brothost (brothost.com) also offers one basic free hosting pack age, but its features are severely limited.

### Professional hosting

Although it is a major consideration, price isn't everything. Flip through The Computer Paper and you'll see dozens of hosting services offering a wide range of Web hosting packages. To help you choose, check Web hosting company

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**Lower-level jasc: Photoshop within...**

*Continued from page 44*

capture to the Elements window. If you move the window, palettes end up layered all over your desktop.

The Palette Well alleviates this problem, but the Well itself requires a huge swath of your screen, forcing you to keep the Elements window near to most full-screen width. This in turn would be offset if only the toolbars were configurable, but alas they're not.

Instead of offering quick colour calibration within Elements (as Jasc does in Paint Shop Pro), Adobe assumes you won't mind recalibrating your entire system via the inevitable Adobe Gamma utility.

The lack of simple colour management also hurts. Instead of offering quick colour calibration within Elements (as Jasc does in Paint Shop Pro), Adobe assumes you won't mind recalibrating your entire system via the inevitable Adobe Gamma utility. That may be fine for professional Photoshop men, but it's unnecessarily convoluted for Elements users, who probably do more other things with their computer.

Sad, even though Elements 2.0 does lack some rather desirable tools, it's got more than enough power for the aspiring digital photographer, or the budding computer artist. What's more, Elements benefits from the endless polish that's been applied to Photoshop proper, and has a feeling of solidity and competence about it that's lacking in other graphics apps.

Bottom line, Photoshop Elements 2.0 is a reasonable value at Adobe's reasonably modest asking price. If you want to work like a pro without shelling out the big bucks, it's a good choice. **C**

## ComputerPAPER

**Buying a digital camera?**

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- Integrated sound card
- PS/2 Enhanced keyboard
- PS/2 Mouse
- Integrated 10/100 network card
- 240W 3D speakers
- 1.44 USB ports

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- MSI 6547 Motherboard
- 256MB DDR RAM
- Celeron 2.66 5400 5400 Video card
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- 10.5" CRT Monitor
- 1.44 Floppy Supply drive
- 17" 100W ATX Case
- Integrated sound card
- PS/2 Enhanced keyboard
- PS/2 Mouse
- Integrated 10/100 network card
- 240W 3D speakers
- 1.44 USB ports

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# **Vanouver**

101-1184 Denmore St  
104 Kingsway, SE corner  
105-1720 Broadway St  
1140 Denby St  
1150 Broadway E  
1188 W Georgia St, SE corner  
1190 Pender St W  
1201 Robson St, NE corner  
1221 Denby St  
1229 Denby St  
1400 W Broadway  
1540 Broadway St  
1610 Denby St, SE corner  
1660 W Broadway  
1744 Robson St  
1810 Pender St, SE corner  
1897 Cornwall St  
2081 Kingsway, SE corner  
2285 4th Ave W  
2681 Granville St, SE corner  
2827 18th Ave W  
2828 Kingsway  
2848 Main St, SE corner  
290 Main St / Cornhill St, NW corner  
3054 4th Ave W, SE corner  
3287 10th Ave W, NW corner  
4181 Main St, SE corner  
4402 12th Ave W, SE corner  
4504 Main St  
468 W 18th Ave at Cornhill  
5207 Victoria St  
5800 Victoria St  
590 Neely St (SkyTrain + Stadi. + Skylink)  
5960 E Blvd  
601 Commercial St, SE corner  
621 W Broadway  
660 Denby St (at corner Park Place)  
6680 Fraser St, NE corner  
730 Seymour St  
737 Hastings St W / North Centre  
7664 Columbia St, NE corner  
796 Burr St / Robson St  
818 West Broadway, SE corner  
8377 Granville St  
890 West Broadway  
900 Denby St  
1000 St / Cornhill Pl, NE corner  
Arbutus St / W Broadway, NE corner  
Baldwin St / Broadway St, SE corner  
Bayview/Hastings NW corner  
Burnard St / Albion St, NW corner  
Burnard St / Denby St, NW corner  
Burnard St / Robson St, NE corner  
Burnard St / Robson St, SE corner  
Burnard St / West Hastings St, SE corner  
Columbia St / W Broadway, SE corner  
Newland St / Denby St, NW corner  
Oak St / 15th Ave, NW corner  
Seymour St / Smith St, NW corner  
Seymour St / West Hastings St, NE corner  
Thurston St / Pender St, NW corner  
Thurston St / Robson St, NW corner  
Thurston St / Robson St, SE corner  
Western Parkway  
New St / Cook Ave, SE corner

## **Granbury**

7243 6th St  
Brentwood Avenue Underground  
3771 Kingsway



## **North Vancouver**

157 Chastell St  
Main Street, Delmar

## **Richmond**

108-5880 Metrolink Bldg  
109-3801 JACOBYA Bldg  
146 - 8111 Ardway Ave, NE corner  
213-18888 Cambria Bldg  
213-12888 Cambria Bldg  
3631 No 3 Rd  
4083 No 3 Rd  
5090-11580 Stevenson Hwy  
6246 No 3 Rd  
8038 No 3 Rd  
995 Westbrae Highway  
7128 No 3 Rd  
7128 Alderway, SE corner  
8141 Park Road

## **West Vancouver**

149-B Marine Drive  
1763 Marine St  
179-Malpas, SE corner  
2436 Marine St  
508-2014 Park Royal South West (opposite bank)

## **LCBO**

• No fee for first 100  
• No fee for 1st 100  
• No fee for 1st 100  
• No fee for 1st 100

## **Building your business Web site**

in design philosophy and what areas it specializes in. A successful Web design firm should also have links to client's pages. You can ask those clients directly about their experience working with the designers.

Having an idea of the type of site you want helps when communicating with the design company. "Are you imagining a personal point of contact? You don't want to end up at the small company dealing with a large Web development team or you may always have difficulties trying to get things done on time and on budget," says Laporte. "Make sure that your Web users don't treat you like a number, and that you have access to all work in progress."

Staves agree, "When you call the design/development firm, ask not the creative director or lead project manager or. Titles vary from company to company, but make sure you speak to a person in a sales, decision-making position. That way you'll have direct access to the person with final say on your price. The senior exec may not directly handle your project, but getting yourself in contact with them gives you more leverage when negotiating your position as a buyer."

Ask about each firm's experience designing the type of site you prefer. Have they performed other businesses, such as back end databases, forms, auto-reports, and shopping cart design? How much do they know about Web site marketing?

Then become a choosy shopper. While it's a poorly kept industry secret that having your site appear first on a search engine query requires payment, some firms will guarantee top 10 or top 30 placement with major search engines and discounts.

Laporte suggests asking for guarantees on delivery date and site functionality. She also recommends obtaining quotes from other firms to ensure the one you're interested in is providing reasonable timelines and cost.

## **Care and control**

At the very least, your Web site is a worthwhile advertisement that works for you 24 hours a day, seven days a week, so it will require maintenance. As Roger "Cracker" Butcher (www.rbutcher.com) says, "The condition of your site is a direct indication of the quality of service you provide."

**Pick up the Computer Paper**







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# Apple gets PowerMacs right



Mark Gurman  
Apple Reporter

In mid-August, Apple decided to surprise everyone with a very low-key unveiling of some significant new PowerMac G4s. We weren't expecting to see any new hardware until after Mac OS 10.2 shipped, but it seems Apple wanted some cool new hardware out there to show off the power of its upgraded operating system.

Speaking of power, we'll have a full review next month of the \$199 Mac OS 10.2 upgrade. Also planned for the near future is a review of the new USB400 per year new device.

## New PowerMac G4s

With the new PowerMacs, we feel Apple has finally got it right when it comes to differentiating its pro line from its consumer line. With the advent of the G4

Mac and eMac, and the debut of the 17-inch iMac in July, it seemed there was little difference between a G4 tower and a much cheaper consumer Mac. Now, that Apple has adopted a dual-processor strategy across the entire G4 tower line, up, it makes for some striking fast pro Macs and some very tangible reasons to opt for a pro model. The new PowerMac improves over the old predecessor in processor speed, expansion, bus speed, and video performance. The case design has also changed slightly with large cooling vents prominently featured on the front face, and more cooling holes on the back. The speaker has moved to the top of the unit, and the CD drive is now covered by a metal panel, but in most respects these new machines will resemble the QuickSilver case design.

There remain three standard configurations: a dual-867 MHz G4, dual-1 GHz G4, and dual-1.25 GHz G4 models. All PowerMacs now feature four RAM slots for a maximum of 2 GB of RAM, four hard drive bays for almost half a



terabyte of storage (40 GB using four 120 GB drives), and space for two optical drives in the front of the case. That space means there is now room for a SuperDrive and a CD-RW drive—a much requested feature since the debut of this case design.

The benefit of dual optical drives is that you can copy the CD in one drive using the burner in the other, which saves you from having to stage the CD in your hard drive first. It would also allow you to burn to tape while burning a data CD in the background.

The standard video cards maintain the dual-display capability, but have been significantly upgraded. The base model

of the PowerMac G4 line now ships with a GeForce 4MX, which was previously standard only in the top-of-the-line model. However, the new GeForce 4MX includes only 32 MB of video RAM, somewhat crippling any performance benefits it had over the old 32 MB Radeon 7500. The other two PowerMacs include ATI's very expensive Radeon 9600 Pro. These new video cards include 64 MB of video RAM. The 1.25 GHz GeForce 4Ti is still available as a build-to-order option.

The G4 towers still have four PCI slots and one AGP slot for expansion, but now sport a new option: bus

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**Tablets: the natural way to draw...**  
Continued from page 74

The devices running Tablet PC are straight (between 1.5 and 2 kg, or 3.5 to 4.5 lb.) notebooks with a tablet LCD screen. They are the first really portable handheld drawing and handwriting computers to be available at something near market prices.

#### A short history of tablets

The first electronic graphics tablet was invented in 1944 by M.R. Davis and T.D. Elliott at the RAND Corp., a research "think tank" largely supported by US government grants (1944 was also the year Douglas Engelbart developed his first working computer mouse).

Tablets were seen as an improvement over inputting commands via a keyboard, and were intended for use both as pointing devices for selecting menu options, and as drawing or drafting tools. Over the next 35 years, many computer-developed tablets as input devices for computers, including Eels, Kars, CalComp, and Caltech's Aethel Research Inc., which developed the Rapid Drawing Tablet for the Apollo computers. The main customer groups for tablets were designers, artists, engineers (for CAD), animators, teachers, and students.

I started to use about 20 tablet models between 1984 and 1997, and found

them very productive for annotation, tracing, sketching, and menu selection. In the days before USB, tablet installation on a PC using the serial and parallel ports was often a problem, particularly with the bulky MS-DOS and early versions of Windows. The main graphics software runs with a tablet included. TruTact Plaster "natural media" software (recently purchased by Corel and added to its existing products), CorelDraw, and Adobe Photoshop and Illustrator.

On the Mac, of course, attaching a tablet was generally much easier, as with everything else Mac-related.

#### Windows

By the mid 90s, though, most of the tablet makers dropped out of the market, and it became apparent that our company, Wacom (wacom.com) was winning the race to create the best artist's tablets.

Pressure-sensitive devices were simply the best, easy to install, very accurate and responsive, beautifully designed ergonomically, and easy to integrate with all the common operating systems of Mac and Windows. Wacom produced tablets in wide range of sizes (from 4x6 inch to 12x18 inch) starting at about \$144.

Around 1996, Wacom also pioneered

the LCD graphics tablet with its P550 model. Although very expensive (over \$5,000, usually), the P550 showed the way of the future: drawing and pointing directly on a glowing computer screen that you could hold like a desktop or lay on a desk like a piece of paper. The P550's screen was still tethered to a computer, so a screen's only possible like a workbench, but it was still a wonderful drawing tool. More recently, Wacom introduced the Cintiq—an LCD screen (15 inch or 18-inch) with a Wacom tablet grid underneath the screen, a USB connection, and software for Mac or PC. A lovely drawing, design, and pointing tool, for about \$2,800.

#### Tablet PC

Tim Sarnett, Microsoft and Windows notebook manufacturing partner, such as Acer, Viewsonic, and Toshiba, began promoting prototypes of the new Tablet PC (www.microsoft.com/windows/tabletpc), a Microsoft-defined standard for ultralight notebooks with an LCD tablet screen for pen input, and a special version of Microsoft's Windows XP operating system optimized for pen computing.

The Tablet PC is aimed at segments of the business computing market—the webmaster, manufacturer, transportation, health care, security, sciences, sales, education and training, marketing, and "nomadic workers" who move from meeting to meeting—where people need to be able to work around while using their PCs.

The Tablet PC is not designed specifically for the communication and design markets, but it is increasingly called for that make. Although none of the Tablet PC makers we talked to would tell us where the tablet technology in their Tablet PCs came from, we found that

on the OEM engineering version of the Wacom unit that referred to Tablet PC. At least some models of Tablet PC appear to be using Wacom technology. This is a good thing: the Tablet PC pens, for example, are very well designed and comfortable to use.

The Tablet PC is getting attention from professional designers, even before its official release. According to architect and educator Dr. Edmund Goldberg, at Towson University in Maryland, "Tablet PCs and direct draw LCDs may become an integral part of preliminary architectural and engineering design and change the face of creative computing. The software tools have emerged just as a new form of computing evolves."

With the Windows XP Tablet PC software coming later this year, these Tablet PCs and direct-draw LCDs, combined with voice dictation and hand writing recognition, should open the way to more natural drawing input.

"If you want to draw, or even move an object, today's CAD software wants to such computation as object snapping, which automatically forces the cursor to snap onto an object when the cursor is within a specified pixel range. Direct-draw input eliminates this discomfort and lets you design and manipulate the screen image in a much more natural manner."

#### Project Calico

In addition to a long list of Tablet PC hardware makers, Microsoft has lined up many software vendors that are developing versions of their applications optimized for the Tablet PC interface.

Corel (www.corel.com) has shown its own Tablet PC software, code-named Calico (for Collaborative Interactive Graphics on the GO!). ☐

## Any other tablets out there?

With two million (and counting) tablets sold, Wacom (wacom.com) has become the dominant brand in the tablet market, to the point where it is hard to find any available alternatives, CalComp, which originated in the 70s as a division of the Lockheed aerospace company, developed a line of tablets that competed with Wacom in the graphic arts market for a while. Currently, though, the CalComp company seems to have pulled back into the engineering market, with a line of very large-format tablets for CAD applications. And, although these CalComp products are for sale online, the CalComp Web site currently only refers to the company's large-format colour pricing sheets.

—Jeff Evans

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# Less need for keyboards on Pocket PCs

Handheld computer users have long wrestled with an ongoing set of trade-offs: size versus weight; form versus function; battery power versus computing power; and keyboard entry versus voice or pen data input.

On the latter issue, there have been many different attempts to create handheld computers that effectively bridge the gap between size and capability. Pocket PC devices have been designed to provide maximum computing power without a keyboard by offering users a variety of ways to enter information, including an on-screen keyboard and handwriting-recognition applications.

As a veteran handheld computer user and a recent convert to the Compaq iPaq, I have found this machine is equipped to

do a great deal of everyday note taking, email management, address book maintenance, and spreadsheet updating with ease, when I really need to get a lot of information into an iPaq quickly and accurately—doing things such as writing this story—I have found that it's pretty slow if I have to use the on-screen keyboard or the TouchScreen handwriting-recognition software, as good as it is.

Enter the Targus TouchKey keyboard for the iPaq. We've written about the TouchKey before—it's also available for Hewlett-Packard's Jornada and various Palm handhelds. It's one of these convenient, fold-out keyboards that attaches to the iPaq and gives me the chance to type as quickly as I could on a desktop or notebook computer keyboard. When folded up

it is almost the same size as the iPaq.

Well, almost. Because the interface at the bottom of the iPaq 3600 series is a little different from that of other iPaq systems—you have to clip a small connector converter into the Slotway to allow the iPaq to fit properly. While this seemed to work well, my concern was that this connector is small enough to be easily lost, plus you have to keep it with the keyboard or the iPaq at all times. (I suspect, however, that this is more a marketing issue for Targus than anything else, and that the next batch of Slotway keyboards for the iPaq 3600 series will not require a converter.) The other quibble I had with the keyboard was that it took a while for the letter "I" key on the keyboard to become as quick as I could get it to be on a being reproduced on screen. The key seemed soft initially, so that typing "the" would always come out as "tye." With use, the problem went away.

I guess the real question is whether or not I would like this hybrid. At around \$348, I think it's worth it. However, would other users advise to potential purchasers make sure you really do need to carry out some heavy-duty typing in your handheld before plunking down any cash.

For most tasks, the on-screen keyboard and TouchScreen software will do the job. But then again, the keyboard was good enough to let me write this entire story on it, something that would have taken a lot longer otherwise. And that has to be worth something.

—Geoff Rathemple

## Apple gets PowerMac G4 right

Continued from page 44

Apple's Xserve rack-mount server. Bus speeds run at 133 MHz on the low-end model and 167 MHz on the other two models, with support for DDR-2000 and DDR 7500 RAM—a first for the Mac.

Besides the dual processors and the DDR RAM bus, the new pro line will perform at more than double the speed of the consumer line, which finally justifies the price gap. The prices for the new towers in Canada are \$2,699 for the dual-667 MHz G4 with 256 MB RAM, an GE hard drive, 1 MB Level-3 cache, and a GeForce 4 MX 32 MB card; \$3,999 for the dual-1 GHz G4 with 256 MB RAM, an GE hard drive, 1 MB Level-3 cache, and a Radeon 9000 Pro 64 MB card; and \$5,199 for a dual 1.25 GHz G4 with 512 MB RAM, 120 GB hard drive, 2 MB Level-3 cache, and an ATI Radeon.

## 9080 Pro 64MB card

As you may have noticed, the prices have increased by several hundred dollars on each model, but this is due in no part to the falling Canadian dollar. The DVD-burning SuperDrive remains standard on the top two models, while the base model includes a CD-RW/DVD combo that can play but not burn DVD media.

The Apple display lineup—15-inch 17-inch, 22-inch, and 23-inch LCDs—has not changed at this time. We still await the release of a 17-inch widescreen LCD for the PowerMac, but in the meantime, you can get \$380 or \$750 cash back by mail if you purchase a PowerMac and an Apple display together (as depends on configuration).

The distinction between consumer and pro becomes clear when comparing the G4 iMac to the new PowerMac.

The top 15-inch iMac costs \$2,799 and includes an 800 MHz G4, no Level 2 cache, and a GeForce 2MX card.

For \$2,699, plus \$20 for a 15-inch LCD, you can get a dual-667 MHz G4 PowerMac, with 1 MB Level-3 cache per processor, and a GeForce 4MX card. Minus the \$350 Apple rebate, the PowerMac comes to \$2,348. Not about \$500 extra, the PowerMac LCD combo gives you more than double the processor power, double the graphics performance, dual-display support and more expandability.

The low and mid-range G4 configurations will be available in stores presently by the time you read this. The dual-1.25 GHz model will not be available until mid to late September. All new PowerMacs include both Mac OS X 9.0.2 and GS 9.2.0 on the hard drive, although they will boot into OS 9.0.2 by default.

## New eMac with SuperDrive announced

At the same time as released the new PowerMac, Apple made some slight changes to its iMac and eMac. The iMac changed in price only, but the eMac gained a new configuration and is now available in two models, which also serve to further confuse the Mac buyer.

Apple has dropped the cost of its all-in-one Mac by the power it set in January when the flat-panel models were introduced. (The prices had been increased due to the rising cost of LCDs and RAM—both of which have since come back down.) The prices are now \$1,999 for 700 MHz with CD-RW, \$2,299 for 700 MHz with CD-RW/DVD combo, and \$2,799 for 800 MHz model with a CD-RW/DVD R SuperDrive. The 17-inch widescreen model, which is still as short supply as many readers, remains

Continued on page 12

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# Careers & Training

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## Wanted: Techie with closing skills

By Sharlene Myers

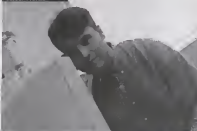
When it comes to marketing highly technical products to a worldwide customer base with varying business and technology requirements, the knowledge and expertise of a tech-savvy salesperson can be critical to a company's success.

Bitfash Inc., an Ottawa-based company founded in 1997, produces mobile scalable vector graphics (SVG) tools that allow manufacturers developers to format content so it can be viewed on a range of mobile wireless devices.

The complex wireless industry, with its revolving door of standards and devices, can be especially unforgiving of those who fail to sell their products well, and many companies have come and gone with a wailing and a cry.

Nick Desbarrats has been with Bitfash since its inception, and is a veteran of four startups with varying levels of success. Having known since he was young that he had destined for a career in technology, Desbarrats says he studied modern languages in university because he "wanted to study something completely unrelated for sanity." Ironically,

### Career Profile



Nick Desbarrats

Bitfash, Senior Product Specialist, Business Development Group  
[Company@Bitfash.com](mailto:Company@Bitfash.com) / [www.bitfash.com](http://www.bitfash.com)

he says he "unwittingly learned valuable skills directly applicable to technical sales and marketing."

Recently Desbarrats talked with TCP about working in technical sales and marketing. Following is an edited version of that conversation.

**TCP:** Tell me about your first experience with computers.

**ND:** I was about nine, and I got a Times Recorder Z800 for my birthday, and was instantly entranced by it—I wanted to learn everything about it, figure it out as quickly as possible, so that I

could write word games that didn't require quarters.

**What does your job involve, what do you do?**

I'm responsible for business development, currently in Western Europe, which is one of our primary markets right now, just due to the nature of the technology we have. You involved with building relationships with carriers and wireless operators, and handset manufacturers.

**Tell me about a typical workday for you.**

There's probably two main categories on the road and not on the road. When I'm in the office, typically I spend a lot of time figuring out who we want to try and see who the right people are to speak with in target organizations, research companies, their products, and how we could potentially fit in with them, and determining how important it is for them to be a customer, from a strategic, and also a profitability perspective.

On the road of course a typical day is back-to-back meetings. For the most companies, we want to make the most of

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...or travel dollars, so it tends to be two or three meetings a day in different cities.

*Who would you be meeting with?*

Typically product management personnel, product architects, people who are basically responsible for designing the next generations of wireless handsets and network services. Sometimes in small organizations that might be a CTO (chief technology officer) or sort of a thought leader, a senior technology planner or thinker inside the organization.

*What job is to convince them of how your technology can work with theirs?*

Exactly. I'm also involved in building presentations that are specifically geared towards particular types of customers or partners. I'm responsible for delivering those presentations, of course, making her that I'm in a position to answer any questions that they may have, and usually those questions get very technical very fast.

So I have to have a very good handle on both our own technology but also, probably even more importantly, I have

to be able to understand the technology gaps that our customers are using so that I can explain how they can integrate our technologies into what they are using right now.

I have to have a very good handle on both our own technology but also, probably even more importantly, I have to be able to understand the technologies that our customers are using so that I can explain how they can... integrate our technologies into what they are using right now.

*How did you end up in this position?*

Originally it certainly wasn't my plan or intention to end up in the sort of business development/sales/marketing field. But generally, in the organization I've been involved with, there's been a very strong need for people who under-

stand the technology side of things and who can communicate them to an outside party.

So, probably because of the languages training or education I've had, I was able to do that, and to convey our message so people on the outside can understand it. And simply because there was such a strong need, I always got pulled in those areas. People asked me to sit in [two] meetings with customers to help them explain what our products did.

*What do you like best about your job?*

Probably the challenge of stepping outside my own organization and trying to look at things from a customer or partner's perspective. It's very difficult to sort of fall out of love with your own products. [But] a lot of technical people or engineers... it's difficult to basically look at something you've been involved in the development of with a critical eye, and to determine not only what's great about it, but also potentially what are its weaknesses. And [then] presenting it in a light that both accurately and truthfully conveys what it is, but also really endorses its strong points and

## « CAREERS & TRAINING »

values from a customer's perspective, which might be very different from what you perceive to an internal person as the most powerful features of your product.

*And what do you like least about it?*

The travel can get a little bit tedious. I'm probably out of the office an average of somewhere from five to 10 days a month.

*Do you go back to the same cities every month or so, or are you going to different places all the time?*

Currently, it's a pretty wide variety of locations, mostly in Europe, sometimes in the States. Typically in one trip I'll have meetings in three or four or five different countries, so France, Spain, Germany, U.K., [and] Holland.

The meetings themselves originally I found were very tiring... but once you get the hang of that, that becomes a little less tiring. But the travel itself between cities—the long flights—can be somewhat tedious.

*What sort of challenges do you expect to*

*Continued on page 30*

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# Employee training for small businesses

By Geoff Whelanlight

**T**raining is all-important to the successful use of technology in a small business. The less someone knows about the tools at their disposal the less they'll be able to do with them. It seems pretty obvious. The real issue around training is not whether your employees will benefit from training, but what kind of training is appropriate.

## On-the-job training

Unfortunately, so-called "on-the-job" training is often an excuse for no training at all. It can be a way to get someone working right away giving them a few minutes to understand some very basic technology functions and then letting them discover whatever else they wish to discover on their own.

The flaw in this strategy is that it does not guide the discovery process—even assume that there is one. While it is

certainly understandable to question why an employee needs to be taught more than the functions you think they need to know about in order to do their job, the fact is that some employees want to be able to contribute more, to do more—and to make better use of the tools available to them.

If all you teach them is the minimum—and you offer no further guidance as to how they should train themselves while they are on the job—they will draw their own conclusions and may spend time teaching themselves how to do things that have no applicability to their job.

Start by thinking about your business and its goals. Then—if you're not one of the likes of employees learning what they are in the job—direct employees to learn about applications for the technology that you yourself have not yet had the time to explore. Let's say, for example, that you would really like to do a

mailing to all your customers about a new service you want to offer. The only problem is, you don't know how to do a "mail merge." From the address in your Microsoft Outlook address book to the letter you've created in Microsoft Word.

Get your employee to learn how to do that. It will not only get the job done, and ensure that you have harnessed the skill base of your staff, it will also make your employee feel like he or she is making a real contribution to the company.

## Selecting an online training solution

There are also a lot of online training offerings available to help employees learn how to better make use of technology—everything from basic office productivity applications to network management to Web development and database design. Before selecting any such training solution for your staff, work with them once again to focus your busi-

ness goals and learn a little more about your employee's personal achievement goals.

A good strategy here is to allow employees—once you have met with them and discussed their goals—to come up with their own online training strategy. You can let them do their own research, their own due diligence, and then make a business case for spending the time and resources to have them do the course.

## Customized training

There are also a lot of options for those who want to send their employees on dedicated courses outside the office. While these can be more expensive and are obviously less flexible than on the job training or online training, they do have the advantage of encouraging focus by employees. If employees know that they are solely supposed to focus on

*(Continued on page 11)*

# Unix book doesn't explain why Mac users should learn it

By Keith Schengle-Roberts

**T**here this little book has one object in mind: teaching Unix books to those in the Macintosh world who want to be power users. It does a good job, though I have doubts as to the usefulness of some of the topics it touches.

The book covers all of the basics: launching and using the terminal program, managing files and directories, and customizing your shell environment. It also goes a bit deeper, showing you how to write files with vi, do remote logins and

access other Internet-related functions, use pipes and filters, and perform such things as background processing and printing. All of this is interesting stuff, but with such a slim volume I came away thinking, "why would I want to go into the Unix shell to do work or printing when there are perfectly good GUI programs on the Mac OS X?"

While the book will give you a working familiarity with Darwin (the name for the Unix core), it doesn't offer very compelling reasons for why you'd want to use it. Why use Linux (a fast-only Web browser) when you can use Internet Explorer or

Netscape Navigator? Why use pine to read email when you can use Outlook?

I know Unix diehards could give me some answers, but the authors haven't. They could have explained how they can be used to do things quickly, or defined how shell programming can be used to automate common, repetitive tasks and processes, for example.

The book is detailed enough to give readers a hint as to the power of the Unix core at the heart of OS X, but in my opinion if it had gone further, it would have been more useful. □



**Learning Unix for Mac OS X**  
Author: Keith Schengle-Roberts  
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 (also in your position or industry in the  
 last couple of years?)

In my position, I feel like I'm very much still making the transition from a technical person to more of a sales and marketing person—I probably have a lot to go. But ultimately, that's probably what I enjoy the most... and there's a lot that's new to me in the sales/marketing fields. The challenges will be continually acquiring those sales and marketing abilities and learning to think more and more like a technical sales and marketing person.

And for the industry itself, it's so vast that, unless you and the idea space in general is very weak, so that's posed some challenges for us. But things like starting to get more in the industry seems to pick back up again.

But would you consider to be the most important skills or qualities that someone would need to do your job?

Yes and foremost, because of the nature of products and technologies we've developed, you have to know the technology side inside and out. I do run into a lot of people who are responsible for marketing and selling very complex technical products into very complex technical markets, so very sophisticated customers, who basically just can't talk to your level, and I think that frustrates customers. They have questions that I've got answered right away or aren't understood properly.

Then of course, the ability to again take it up outside the role you had in developing the products, and look at it with a critical eye—I think that that's something that is absolutely essential and difficult to learn. [You need to be] really just focused on the customer's needs and think about what is important, which features are important, what messages are I going to be most interested in hearing based on the kinds of problems [and] business needs I have. That's the other, probably most important, skill. And then of course the ability to take all that into account and communicate it.

What's your favorite thing to do in your free time?

Strangely enough it's probably traveling. I end up going to so many air miles that I can pretty much go anywhere I want when I do have the time to do so.

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## VR tool steps in where Apple left

By Susan Saeman

When Apple unveiled the QuickTime VR (QTVR) technology back in 1997, it was the first drinking-mountain technology that allowed users to pan and scroll around a photo-realistic 3D environment in real time. In those days, 3D technology was not as advanced as it is now and most desktop computers could not render realistic scenes in real time.

Now, with our OpenGL-compatible 64 MB graphics cards, real-time 3D is easy, but for many uses, such as architecture and real estate, QuickTime VR remains a computing technology. Many car manufacturers use QTVR movies on their Web sites to allow users to walk around and look at new car models.

In order to create a QTVR movie you need to first photograph your scene or

object, then stitch the photos together using special software. With the release of QTVR format, Apple introduced the first program for generating these movies, QuickTime VR Authoring Studio. It was such a complete and well-written package that it was upgraded only once, from 1.0 to 1.0.1, and it was available until 1999 for the original price of US\$199.

However, the five-year-old program was starting to show its age, and it was certainly not capable of running under OS X without a complete rewrite, so Apple discontinued it. This left QTVR authoring tool development to third parties like RealViz and VR Toolbox.

There are several programs available for Mac that allow you to create QTVR content, but Stitcher is probably the most powerful and flexible. The current version, Stitcher 3.5, can run under Windows, Mac



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Stitcher 3.5 gives users needed tools to create QTVR movies. Get the latest version at the developer's Personal Web site: [www.stitcher.com/development/](http://www.stitcher.com/development/)

OS 9 and 8. Its main attribute is its ability to stitch images without setting up detailed camera profiles as is required by most other QTVR creation tools.

In other such programs, you usually have to enter information like the focal length of the lens, but Stitcher allows you

to force stitch any images together even if they were captured with a handheld point-and-shoot camera. The included tutorials help you create a sample QTVR movie as well as a cubic VR movie. The results are impressive considering.

Continued on page 38

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# FileMaker 6.0 adds useful new features

But developer ignores other longstanding user requests

By Dave Miller

**F**ileMaker 6.0, the latest version of the popular database product, is both a welcome improvement and a disappointment. Many longstanding requests from users and developers have been ignored as this upgrade had some very useful new tools been added.

Users utilize the current FileMaker Server version. According to FileMaker Inc., FileMaker Pro 4.0 (Unlimited) and FileMaker Pro 4.0, which support the new features in FileMaker Pro 6.0, are planned to ship sometime this fall. Until then, some of the new features will have limited application.

## XML support

The new FileMaker features vastly improved XML support. Previously users only employed XML's ability to serve data to the Web and its external stylesheets. With FileMaker Pro 6.0, the XML capabilities are built-in and more accessible. Import/export menu selections are available without the need for the Web Companion. Customers can script these XML data import and exports. Also within FileMaker Pro 6.0 is an XSLT processor allowing stylesheets to be processed without the need for the customer to install their own.

An interesting example of using XML is a demo file that allows FileMaker to query a Web site directly to update information within a FileMaker Solution. The demo is of a FedEx package tracking application. In FileMaker, you enter a package code, and the solution returns the package shipping details. While it has been possible to launch a Web browser from FileMaker for a while, having a two-way flow of data from the Internet is a very useful new tool.

Other examples of uses for XML capabilities include:

- Importing XML data from a SQL server without the use of ODBC drivers (this is a real plus for Mac OS 9 users who have suffered for years with bad or expensive ODBC drivers).
- Share information with other workgroups who don't use FileMaker Pro by sending data from FileMaker directly into a formatted Excel file or other text-based file formats.
- Create charts and graphics using the Standard Vector Graphic (SVG) file format to represent FileMaker data.
- Import accounting data from QuickBooks or query Web-based con-

Continued on page 38



**FileMaker 6.0**  
FileMaker 6.0 is a 64-bit application.  
FileMaker 6.0 is a 64-bit application.

## New features

One of the new features of FileMaker 6.0 is the ability to import digital image capture and file support. The company has added more than 20 new templates for a variety of different industries and home applications.

These templates are better examples of the sophistication that is possible to build into FileMaker. They also have a more updated graphic design and include more instructions on how they can be extended and customized. The developers have also added some new script features like Format Picture and Sort on Data Rows. FileMaker 6.0 also includes substantially better XML import and export capabilities.

## File Format Issues

FileMaker Pro 6.0 files share the same format as FileMaker Pro 5 and 5.5. All three versions of the database exist on the same network. All ver-



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**FileMaker 6.0 adds useful new features**

Continued from page 57

private information without using ODBC.

Most of these tricks were possible before, using ODBC, or text files, but by going with the industry standard XML, much more integrated two-way data flow can be created.

Work with XML does require some knowledge of XML and XSLT (the language used in XSL style sheets to transform XML documents into other XML documents), so FileMaker has included some sample files for getting started. The company also maintains a Web site where users can download additional examples of how to use XML.

XML is a useful technology for data exchange between different islands of data. XML can be limited, as it requires both systems to be cooperative and coded to support the encoding, transfer

rates, and decoding of text documents. ODBC or JDBC are more real time and high performance. They also allow for more "on-the-fly" coding of queries, which, unless developers enter a rich XML data set, was always possible. FileMaker 6.0 doesn't add anything new in these areas. Some developers would have liked to have seen improvements here.

**Data and image importing improved**

One of FileMaker's strengths has always been its ability to work with images, PDFs, and QuickTime clips as its Customer Internet field. One of its weaknesses has always been getting this type of data in and out of FileMaker. In the past, users had to revert to plug-ins to achieve batch-style imports and exports. FileMaker 6.0 has improved and simplified the import/export capability. It is

now possible to capture images and related data directly from a digital camera (an OS X only, but strangely OS X users don't get iPhoto), and export multimedia files from a folder into a FileMaker Pro database.

**Custom Dialog Boxes**

The new Custom Dialog Boxes feature allows developers to create dialogue boxes with custom and dynamic titles and messages, which is useful for error or quit feedback boxes. While this is an improvement, the Custom Dialog Boxes are not infinitely modifiable. In previous versions, the Show Message script step allowed developers to display custom messages, but they were limited to three options (Yes, No, or Cancel).

**FileMaker 5.x specify message capability**

More developers would probably have for one of a Visual Basic-style base screen layout program. Instead, FileMaker 6.0 gives the ability to add up to three input boxes. This can be useful for enforcing data entry standards. Some users will still be frustrated by this feature. Developers may still need to use third-party plug-in tools to achieve their desired goals with regards to Dialog Boxes.

**Format Painter**

Format Painter is another useful new tool for creating layouts. It allows developers to use the style (text size, font, fill pattern and colors) they've applied to a piece of text or a field and instantly apply it to another text block or field. Style information is kept in FileMaker's internal clipboard, so formats can be copied to other open databases.

Unfortunately, the command is tucked away in a menu and is not acces-

sible directly from the screen. An extension on the formatting area and a way to add key for rapid access would have added to its functionality.

**New Find and Replace**

The new Find and Replace function is also a welcome addition. In previous versions, this function would be approximated using a calculated field and replace, but it would be scary to new or experienced users as it required building a Replace calculation statement. Now it's very simple and straightforward, like the find and replace function in a word processor.

With this new tool, users can easily change specific text in their databases. It will find and replace text in the chosen record, across all records, within the current field, or across all fields. What is a lot worrisome about this capability, however, is that there is still no undo command.

**Sort uses a field's content names**

Another useful interface improvement is the addition of a Sort command into the properties function of all fields. To create this command, simply click in any field and then right-click (Control-click on a Mac) on the field. This launches a pop-up menu that includes the Sort by Field command. This sorting window was always there, but it now casts its focus, especially at databases with a lot of fields. It provides a more intuitive way of sorting a record set in front view, without having to navigate to the Sort Records dialogue.

**Customize and extend found set**

FileMaker users have long been able to

Continued on page 100

**VR tool steps in where Apple left**

Continued from page 56

ering have little time the process takes.

Perfectionists can spend hours getting the alignment just right and adjusting all the images in Photoshop, but if you don't have the time or the patience, you'll find the built-in equalization and image adjustments are sufficient.

The installation and setup of Stricher is simple and the software will install in Mac OS X without requiring a reboot into OS 9. The interface, however, seems very Windows influenced. Closing your current document, for example, also quits the program. Despite this, most Mac users will find the program simple enough to use once they've worked through the tutorial—the results are definitely worth suffering through a few interface quibbles.

Stricher does everything QuickTime VR Authoring Studio did plus a whole lot more. And unlike Apple's authoring software, Stricher supports both Mac OS X and Windows, making it perfect for cross-platform environments.

At US\$99, it's not cheap, but if you are using QTVR to add flair to your Web and multimedia projects, the price is small compared to the productivity gain.

We recommend Stricher to professional photographers and media authors looking to get into QuickTime VR authoring. In fact, we would even recommend it for enthusiasts since it not for the high price tag. Perhaps Apple should consider a "lite" version to cater to the consumer digital camera crowd.

In all, a very solid offering. □

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### Getting around Word faster

Continued from page 37  
it with Find. This is a great tool for moving around a document from one instance of a word to the next, and it's particularly handy when the word you're looking for is unique or appears only a few times in a file. To use Find, choose Edit, Find, type the text you want to search for, and click Find Next. Continue pressing Find Next until you locate the instance of the word you're interested in. You can work from the end of the document up if you start at the bottom end, as the Find dialog box chooses Main, then change the direction to Up.

You can also fine-tune your search to locate text by case (upper or lower). In this situation, searching for "Computer" will only match "Computer" and not "computer" or "COMPUTER." You can

also search for whole words, so searching for "computer" won't match "computer use," for example.

Another Find option involves highlighting all occurrences of a piece of text in the document. To do this, choose Edit, Find, and type in the word or phrase. Now enable the Highlight All Items Found in checkboxes and choose Main Document from the list. Click Find All and every instance of the selected word will be highlighted for you. You can now move through the document checking each one. As soon as you click in the document somewhere, the highlighting disappears. □

Hein Heidey specializes in writing guides on laptops. Her columns appear regularly in a number of publications in Victoria, the U.K., and the U.S. Contact Heidey at [heidey@heidey.com](mailto:heidey@heidey.com).

### Apple gets PowerMac G4 right

Continued from page 41  
at \$5,149. The \$1,699 entry now comes standard with a CD-RW/DVD combo drive, instead of a CD-RW. This is a great change for those wanting a home computer with DVD playback. However, there is now an even better entry, with a

standard SuperDrive and an 800 MHz G4 CPU for \$2,299. This is where things can get a little confusing: a \$2,799 G4x is said to be the cheapest Apple computer that included DVD burning, but the latest can now be found on a \$2,299 entry.

Continued on page 170



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# Some fast fixes for your bag of image-editing tricks

By Frank Lien

Digital technology has made photography more convenient, but it can't guarantee that every photo will turn out perfectly. Too much light, too little light, poor-quality reproduction—these and many other faults continue to plague our PCs.

On the other hand, digital tools do make it easier to repair and upgrade the photos that don't quite work out. Here are some tricks, well-known to the professionals, that anyone can easily apply to their own images.

## Contrast and colour

Before you even think about adjusting the colour or brightness levels of your images, consider adjusting your monitor. You can't improve the quality of every monitor as printed (but will even be used to view your pics, but if you own an setup a way off the better track, you can be sure that very few people are going to see your work in its best).

The professional approach is to calibrate your entire system. Adobe products generally include the Adobe Gamma utility, which modifies your system-wide colour setting. Unfortunately the effect may not suit all applications (a darker setting tends to be more useful), and is difficult to reverse or bypass once installed.

A less intensive solution is to adjust your graphics software. Most graphics apps have at least a simple gamma adjustment. All you need is a bit of patience and a known colour-contrast reference image to guide you.

We'll find several on Bill Hamra's pages. Unlinked page at [www.hamra.com/~rebarbar/col.htm](http://www.hamra.com/~rebarbar/col.htm), and a more extensive discussion within the Vista Photomedia pages, at [www.vista.com/under/monitors/](http://www.vista.com/under/monitors/).

All you need to do is set your system so the image looks right. Then if you get an image that still looks overly light or dark, you can be confident that it actually needs fixing.

The "skin" image has at least one area of pure white (255,255,255 in RGB terms) and another of pure black (0,0,0)—which is typically what your software's Auto Contrast function will tend to create. However, this won't ne-



Use the Curves dialog, in a program like Photoshop, to bend the "right" end of the blue curve to remove the yellow cast from an image (before, left; after, right).

cessarily give you exactly the desired range of shades in between. Most often, you'll want to restore detail that's hidden in the darkest or brightest areas. The RGB curve in the Curves dialog gives you total control over the relationship between different shades in your image. (In Photoshop Elements 2.0, the Fill Flash and Adjust Brightening tools do a remarkably good job of applying two basic curves at the expense of detailed control.)

In the simple image the hidden motorcycle actually has a lot of detail that's not currently visible. Boosting the dark end of the RGB curve can bring this out. Naturally, there's a price to be paid: boosting the dark end, at some really weird levels if you try to warp the RGB curve too much.

A reasonable compromise is to leave the bike a bit dark. Or you can cheat. In this particular case, it's easy just to select the lower half of the image before applying your curve. The result still looks a bit flat, but combines the best of both light and dark versions.

Alternatively, you could crop out the bike entirely, as it has now become quite a useful image on its own. Or you could go fancy: apply your RGB curve to a new adjustment layer, then create a gradient on the Layer Mask to make the effect strongest toward the bottom of the image.

Colour casts are handled similarly, using curves. Old photos can be amazingly yellow when scanned, and photos taken under fluorescent lights are a hideous greenish-blue. Sometimes, an Auto Colour tool can eliminate the cast, but only if it can guess correctly what the image is supposed to look like.

The trick is knowing that colour isn't all black, including where, grey and blue, should all have equal amounts of red, green and blue. You can check this using the Info tool in Photoshop or Elements. White areas should have RGB values near the maximum of 255,255,255.

A yellow cast will show up as a deficiency in the complementary colour, blue. To fix it, open the Curves dialog and bend the "right" end of the blue curve until you read roughly equal RGB values in the white areas. (You'll probably need to go down the dark end of the curve, to avoid getting black shadows.) The improvement can seem miraculous.

The Color Cast command in Photoshop Elements simplifies the process. It lets you click on any point that you think should be colour-neutral, then adjusts the colours to make it so.

## Retouching

There are a number of forms of detailed damage that can afflict an image, and may require retouching. However, they

all need the same technique: proximity.

A judicious use of the Rubber Stamp or Clone tools.

If the damage happens to be colourful, as much the better. You can then use colour Channels (provided your software offers them) to isolate the problem.

A bad case someone might be a black and white photo that's had cranberry juice spilled on it. Display the red channel, and the blemish would become glaringly obvious—and easy to fix. You could paint it out using the Clone tool, perhaps cloning from identical areas in another colour channel. Or, since the image is monochrome, you might be able to discard the red channel entirely.

A similar approach can help with the common case of "red-eye." In this case, the problem is literally an area of red pixels. Channels are, therefore, that it appears almost entirely in the red channel of an RGB image. Working in the red channel, you can simply paint the pixels with black, or use the Burn tool to darken them.

You can also use a Red-eye brush, but that won't necessarily do a better job. Red-eye tools selectively replace the red pixels, or simply paint with black, but either way you still need to check that you're letting mainly the right pixels.

Colour channels are a particular boon in the nervous wreck. You can do an amazing amount of damage as a single

# HP Canada service diverts older hardware from landfills

By Jessica Malone

**H**ewlett-Packard Canada has announced a new service in its Planet Partners Program (www.hp.ca/planet) that it hopes will help reduce the amount of e-waste headed to Canadian landfills.

For a fee ranging from \$20 to \$60, HP's Take Back Service will pick up computer

hardware destined for the dump at a customer's choice, anywhere in Canada "as long as it has road access." The service truck is taken away and evaluated for potential reuse.

According to the HP recycling Web site, the service accepts printers, scanners, fax machines, PCs, desktop servers, monitors, handheld devices, along with associated components like cables, mice, and key-

boards from any manufacturer. Other types of consumer electronic equipment—such as VCRs, DVDs and TV sets—are not accepted.

If the hardware is deemed unusable, it is sent to Noranda's recycling plant in Inverville, Ont. If viable, it's directed to Computers for Schools (www.compschools.org), a program that provides Canadian schools with free refurbished computer equipment. Older 5th PC or peripherals can be donated directly to Computers for Schools at no charge. See the Web site for drop-off locations and details on the type of equipment the program accepts.

"The original [Take Back] program was launched in the U.S.," says Frances Edmonson, the manager of environmental health and safety for HP Canada. She says they launched the program here a year later after Canadian customers began requesting the same type of service.

"The reuse customers are asking [the HP program] to that we can guarantee 100 percent diversion from landfill, which

## More info on e-waste

### The Real Action Network

The size of this Seattle, Wash., group has grown and developed since 1995. It is a group of information and resources on e-waste including The High Tech Recycling of America study on the e-waste of risk which is developing insurers.

www.action.org

virtually no other vendor or even recycler can do. So that's the great thing for our customers," said Edmonson.

HP says it does not put all for the program. "It's not cheap, it costs money. We do not ship waste to developing countries. Many recyclers claim they are recycling and all they are doing is shipping the waste off," she said.

"We've had a long-term commitment to the environment. We've been doing things like laser cartridge recycling for over 10 years. So this is one more step in that evolution."

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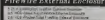
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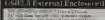
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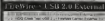
FireWire External Enclosure (Drive Kit)



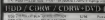
USB 2.0 External Enclosure (Drive Kit)




FireWire / USB 2.0 External Enclosure (Drive Kit)



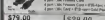
HDD / CDRW / CDRW / DVD for FireWire / USB 2.0



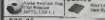
FireWire / USB 2.0 Products



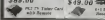
FireWire / USB 2.0 Products



FireWire / USB 2.0 Products



FireWire / USB 2.0 Products



FireWire / USB 2.0 Products





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### < GRAPHICS TOOLKIT >

#### Some test files

Continued from page 165  
channel without having it show in the  
final image.

Here's another example: If you're trying  
to sharpen an image, say a portrait of  
someone's face, check the colour chan-  
nels to find the one with the least skin  
detail—often red. You can then apply a  
heavy Unsharp Mask to this one chan-  
nel, without bringing out any unpleasant  
intensities.

If the image has that blocky, over-  
compressed look, you can pick the chan-  
nel with the worst JPEG artifacts, usually  
blue, and simply blur them out with  
the Blur tool.

If you're adventurous (or desperate),  
you can even try changing colour  
modes, to CMYK or LAB, which have  
quite different sets of colour channels  
that may show up exactly the problem  
you're trying to repair.

In Photoshop, conversions between  
RGB, CMYK, and LAB are virtually loss-  
less. Other programs, such as Corel  
PhotoPaint, seem to produce colour  
shifts when you change modes, so you'll  
need to be more careful.

#### Parameters

After all the heavy repair work, why not  
make a lot of post-pan. Digital cameras  
make it tempting to shoot wide  
panoramic views as a series of pictures  
that can later be stitched together.  
Photoshop Elements 2.0 and Corel  
PhotoPaint both have automated tools  
for this, but doing the job manually will  
only cut a little effort, and often result  
better control.

First, load up all the images you want  
to join. Check their sizes, then create a  
single new file that's a bit bigger than  
their total width, and a bit taller than the

largest height. Paste copies of each origi-  
nal image into the new blank area... then  
close the originals to release some work-  
ing memory.

In Photoshop, each of the pasted  
images ends up as its own layer. In other  
programs, they'll likely appear as sepa-  
rate objects. In either case, you now have  
the freedom to move them around and  
match them up.

In particular, you can apply colour  
and contrast settings, as discussed ear-  
lier, to each of any variations between  
the separate images. Also, you can rotate  
the images so that they line up properly.

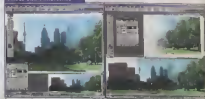
Then comes the real trick: fading the  
edges. In Photoshop you can do this by  
adding a Layer Mask to the appropriate  
layers, then filling it with a horizontal  
gradient. Corel PhotoPaint has an exot-  
ic automatic transparency tool that lets  
you draw a transparency gradient  
directly on any object.

Make the uppermost image transpar-  
ent for most of the width of each over-  
lap. Zoom in a bit on the overlapped  
area and you'll find that you can easily po-  
sition the transparent image over the  
underlying one, nudging it into perfect  
registration using the cursor keys. The  
two images literally "snap" together  
when you hit the right position.

You can now Flatten Image (or equiv-  
alent) to combine the layers (or objects),  
then crop away any unwanted back-  
ground. Use Dodge and Burn to even  
out any remaining variations in bright-  
ness, and you've got a virtually seamless  
panorama.

The same approach works for mixing  
any type of images. For example, if  
you're warning something that's too  
large for the bed of your machine, try to  
arrange the individual parts so you can  
join along areas of limited detail, and  
you'll be able to huff the seams com-  
pletely. □

### Photo File: Panoramas



To create a single flattened panorama from many multiple images, place each image on a separate layer, then lock  
the edges of the top layer where the images overlap.







